Notebook, PN-05-03-05

This pocket notebook consists of a calendar for 1905. It was used by Edison during March 1905-April 1906, and again during early 1908, primarily for notes regarding experimental work and other matters to be undertaken at the laboratory. Many of the proposed experiments pertain to the chemical composition and performance of Edison's alkaline storage battery. These include investigations of swelling in the positive electrode pockets, tests of various tubes for the same purpose, related chemical research, and the notation of mileage and routes for an electric vehicle. There are numerous experiments on metallic flake for battery electrodes, including one on cobalt flake marked "Curious!" A few notes and drawings relate to experiments with phonographs. The book also contains notes about the location and availability of cobalt ores in North Carolina and elsewhere. The North Carolina entries are copied from a book identified as "Wurtz." Included as well are notes about arsenical compounds and reactions; notes about the properties of bismuth; an entry by Edison reminding himself to notify Frank L. Dyer about filing a patent application on the use of cobalt in storage batteries; and some rough calculations and measurements, including cost analysis figures for the Edison Portland Cement Co. works. Among the employees mentioned in relation to individual experiments are Ralph Arbogast, Jonas W. Aylsworth, Otto Groethe, Frederick P. Ott, John F. Ott, and Ludwig F. Ott. Some of the entries may be difficult to read because of bleeding purple ink or smudged pencil. The pages are unnumbered. Approximately 200 pages have been used.

Leib
Moss
250 Morrell
30 Chmielewski
750 Lanfer-Nippert

250
30
7500
37500
45000
12 | 45 75
45

PN-05-03-05

Things Easily Forgotten.

No. of Watch Case.....

No. of Works.....

No. of Bank Book.....

No. of Bicycle.....

My Weight on ..... lbs.

Height.....

Size of my Hat..... Gloves.....

" Hosiery..... Collar.....

" Outfit..... Shoes.....

" Drawers..... Shirt.....

This book belongs to

In case of accident notify

Weal SUN., JAN. 1, 1905 Thof.

Feby 28 1905

Makes the spark Nicely Red by the [illegible]
[illegible] out the slight [illegible]
Carbolic Sp. [illegible] Borac
Acetate Zinc [illegible] at 195
mix with non volatile [illegible]
[illegible] Amm [illegible] Phthalate [illegible]
Only Sufficient the Ammonia or [illegible]
Volatile [illegible]
Volatile 218 [illegible]
Crude in place [illegible]
[illegible] Nitrate [illegible]
Nitrate [illegible]
Amm [illegible] Nitrate [illegible]
[illegible]
Carbolic [illegible]
Amm [illegible]
Nitrate [illegible]
[illegible] where R by H.

Wea. MON. JAN. 2, 1905 Ther.

Wea. TUES. JAN. 3, 1905 Ther.

Mch 5 1905 = to make Ag more more workable at factory make with molasses enough to offset the dry-powder & screen to work the size - put in pocket press & soak out ~~[illegible]~~

Make alloy Ni & Co to make flake by rolls & oil process from 90 Ni to 10 Co & varying 10% down to 90 Co to 10 Ni & make into cells -

Clean the Ni flake by Rolls & oil process by Hot Hydrogen also Co

Try Ni flake plated with an Ag Pt

Try Oxidizing Ni_2O_3 with flake Co at 1st & OK by with flake Ni

See if Tungsten brings well around ox in bathing [illegible]

Wea. WED. JAN. 4, 1905 Ther.

Wea. THUR. JAN. 5, 1905 Ther.

March 5 1905

It is advantageous to use the $Ni(OH)_2$ particles thru 115 or 30 but as this is not very correct can make it thru 15 or 100 mesh making of much coarser are possible this requires heavy Malaboto + flake to coat surface thus if it were finer that possible 100 mesh not ground finer yet such nuts (mesh) $Ni(OH)_2$ or glazed with it + Re prepared

Heat Unsafe Na + K use of Conductor also in hot Hydrogen

Ni flake coated with Ni_2O_3 carbon free - also $Ni\,Co$ alloy 1/4 % Coated Co_2O_3 + then in hot carbon

Look at very thin flakes of graphite from old pencils but transmitted light

Wea. FRI. JAN. 6, 1905 Ther.

Wea. SAT. JAN. 7, 1905 Ther.

March 5 1905

Get some Ni Cupe which have been run long time in one gallon bottle & found on opening the bottle will clean it on an [illegible] where it can be [illegible] [illegible]

Get a complete [illegible] good [illegible] pockets dry [illegible] [illegible] Recommend [illegible] Soak 10 [illegible] H_2O [illegible] put back in 33% [illegible] [illegible]

[illegible] Nickelship [illegible] on Kodak

Wea. SUN. JAN. 8, 1905 Ther.

Wea. MON. JAN. 9, 1905 Ther.

Mch 5 1905

H- Li Be B C N O F Na Mg
K Ca Sc Ti V Cr Mn Fe Co
Ni Cu Zn Ga GE As Se Br
Rb Sr Y Zr Nb Mo Ru Rh Pd
Ag Cd In Sn Sb T I
Cs Ba La Ce Pr Yb Ta W
Os Ir Pt Au Hg Tl Pb Bi
Th U-

Insol KOH, Ni Co Mg Fe
Cd Ce Ur Pt Ag Bi
Cu

Pt — alloying Cu
Silver 90 Co 30 Ni
80 Co 20 Ni -
Cupelled Ag -
Cu plated Pt, Ag-Ni
Sulphuretted Ag-Ni
Co-Cu Fe Pb Bi Hg
Cd Mn Mo Cr

Wea. TUES. JAN. 10, 1905 Ther.

March 5 1907

Wea. WED. JAN. 11, 1905 Ther.

Selenate Ag Ent by
deposed of acc of Selenous
by boiling or zinc
thrown down by metals -
try Strip Ag Sulphuric
also Selenic -
graphitoidal Selenium
Metals
graphitoidal Selenium
not affected by
Nitric & Chloric
K Boiling or alkalies

See particular Selenite
Chromic & Tungstic
also Molybdenite

Wea. THUR. JAN. 12, 1905 Ther.

March 3 1905

Wea. FRI. JAN. 13, 1905 Ther.

Silver Nitrate: Hot Cd:
Etc –

Niobium Nitride Combined
Elec - dull black powder
not called by Nitric
Scarcely by Aqua Regia –

To make NT, then
electrolyze, use the
metal as Positive
& Platinum Neg in
Ammonium Chloride

Not

Wea. SAT. JAN. 14, 1905 Ther.

Wea. SUN. JAN. 15, 1905 Ther.

Wed 9 1904

Molybden Phosphate -
Conducts Elec

Tungsten Metal
not decomp by
acids or alkalies

Write Bangham
about the Varnish
for Carbon Fil
also the stuff
from Standard Oil -
for Crayo

Wea. Wed. Jan. 16, 1905 Ther.

Plate Ni on Iron both sides, then roll out to plate - & cut non out - weld by heat also plate Ni + Co 60 Co 40 Ni on iron - then weld in Hydrogen - roll out to plate + Cut out [illegible]

Wea. Thurs. Jan. 17, 1905 Ther.

My pocket with [illegible] powder - plated with Ag - 72 sides -

If the tool is worth Chrome with [illegible] Nickel in H form a hydride - then Reduce in CO, If H, then use Mg + [illegible] in atmos free of N -

The plated Ni Co Semi alloy Heat in CO to weld

Wea. WED. JAN. 18, 1905 Ther.

Wea. THUR. JAN. 19, 1905 Ther.

Wed. Jan 19 1905

or in Vacuo preserved
displacing air by
CO2

Take 2 pieces 33% chlgd
dry with KOH in —
Then KOH for 200 —
Then Boil in water
Then put 1 in 33%
the other in 21%
see Swell

Put swell of grain
from in 20 in Bigelow
see fetch greatest
swell Common is found
also Comp. swell Gray
Cor + Big Cor 33%

Wea. FRI. JAN. 20, 1905 Ther.

Wea. SAT. JAN. 21, 1905 Ther.

Mch 10 1905

Make a Co byth powder
15% Hg Run on off side
get chg Voltage & chs chs
Sulphid. Etc

Curious! why doesn't
strong acetic a decomp
the black Hg_2O_3 &
Co_2O_3 & take out of
the Cups that has
Cobalt flake —

See if sugar solution
with remove
Copper from ground
Book 46
Mch
Mercury —

Wea. SUN. JAN. 22, 1905 Ther.

Wea. MON. JAN. 23, 1905 Ther.

Mch 11. 1905

Make pockets already
Commenced with one
end open with flap
put on Hydraulic cylinder
Longitudinal Iron - fill on
end. Cross floors
put on [illegible] for Cor
Light [illegible]
Gridiron [illegible] one
[illegible]

Coned fill tomorrow
by assembling on
[illegible] moving [illegible]
filling [illegible]
Arts [illegible] there
[illegible] 5th [illegible]

Wea. TUES. JAN. 24, 1905 Ther.

Wea. WED. JAN. 25, 1905 Ther.

Week 11 1905

See Curve of growth chart on the group chart hand of Cards Culture in Mankato log 218 with 6 day 13/ area glass plate mixed in to get pure culture

when get plate of lake make growing 20 or 30, then out in water in cup 150 made fine tip fine points or unbreakable, + pneumo

make 20 or 30 - fill cup pour melted agar pneumococcus press + dissolve Pneumococcus

Wea. THUR. JAN. 26, 1905 Ther.

Wea. FRI. JAN. 27, 1905 Ther.

or what will be better
perhaps put cups
+ hand press them full
with paraffin by dipping
hot & cooling the
dies above with dies have
proved, possibly Southern
Under these paraffin cells
See [illegible] of [illegible]
[illegible] paraffin out
The paraffin [illegible] out [illegible]
[illegible] superior [illegible]

Use 20 [illegible] 50 [illegible]
Cross [illegible]

Wea. SAT. JAN. 28, 1905 Ther.

Wea. SUN. JAN. 29, 1905 Ther.

Make some the flake burnt till not oxide then reduce in H, to get rid of N.

ditto bleaching in CO to get rid H & N -

Try German Silver flake -

Wea. MON. JAN. 30, 1905 Ther.

Wea. TUES. JAN. 31, 1905 Ther.

alloy of Ni & Aluminum

Al_6Ni large tin white

laminic SG 3.69

by melting 8 pts Al

with 3 pts sublimed

$NiCl_2$ & 20 pts

Cl K & Na & heating

reaction with flitts

$NiCl_2$ — 12

Ni_2Sb_2 Thin plates

Thus would work

in Wa possibly

Wea. WED. FEB. 1, 1905 Ther.

Wea. THUR. FEB. 2, 1905 Ther.

No 50 Cu 50- plate
out the copper - use of
d falls pieces -

7 Red by H, allowed
absorb CO_2 so not
pyroporic -

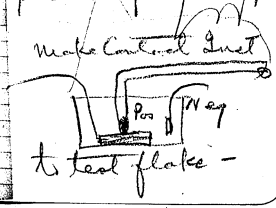
see charging
Economy of
Soft 4 [illegible]
prevented from

Wea. FRI. FEB. 3, 1905 Ther.

Wea. SAT. FEB. 4, 1905 Ther.

Treat a Reg E 18 -
when prime from KOH
by Bichromate water
after reversal to
get all the iron out
the market grid
in the weighting
state — prevented
bad contacts get
pocket grid —

Make Contact Sheet



to test flake -

Wea. SUN. FEB. 5, 1905 Ther.

Wea. MON. FEB. 6, 1905 Ther.

Swellmay be largely
due to crushed +
compacted surface
in contact with pkt.
+ very closed holes
so fold in of gas tight
at holes very great
by flake 60 Co 40
Ni grain in cups
with very open holes
can fold them open
then see if swell
diminished or
also this + fine
COM Red by H.
Stuck on outside
flake by Molasses

Wea. TUES. FEB. 7, 1905 Ther.

Wea. WED. FEB. 8, 1905 Ther.

to give gas passages

group Reg. 200 Mag.
chlorate Kal mixed 4.
Castor 200, Soak
Nacl fmy, 150 meal

group aloes, Cor 200
Soak, Rhamnifolf
200

group Cor 200
three nights off
without Soaking

Wea. THUR. FEB. 9, 1905 Ther.

Wea. FRI. FEB. 10, 1905 Ther.

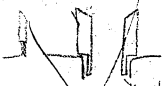
Put grid in glass cage
changing copy every
about 10 [illegible] minutes.
2/1000 [illegible] for
2 chordes than
remove clamp —

[illegible]

Wea. SAT. FEB. 11, 1905 Ther.

Wea. SUN. FEB. 12, 1905 Ther.

Johnson make model
rubber & gauges
top cell - worked



See about Cobalt
plated cups -
See Webber about
the battery posts
drop [illegible] rubber
Cleaning [illegible]
+ doing sundry soldering
[illegible] parts, etc work

Wea. MON. FEB. 13, 1905 Ther.

Wea. TUES. FEB. 14, 1905 Ther.

Warren make
60 Co 40 Ni by wea
Ni [illegible] + Co [illegible]
scales 20 [illegible]

Nat [illegible] not [illegible]

~~[illegible]~~

Sulph Fe K 861
" Ni 865

Chl Fe K [illegible]
" Ni 818

Ni 1200 to 1400 C
powdered Iron Scale
thro 30 on 60.
mixed with Ni flake
or Ni CO flake -

Wea. WED. FEB. 15, 1905 Ther.

Wea. THUR. FEB. 16, 1905 Ther.

Heated yellow white in Hydrogen then now Calcium out,

Phosphate Lime -
Get some opaline powder
Mix 30 on 60. cover flake
over 150 above cover then
bank out [illegible]
Re Cover 200 - then to welding
heat in H - then [illegible]
out Lime [illegible]
atmosphere press thru lime
See Lowe about the
pressure [illegible]

Mix Magnesia with
minimum Hydrogen pressure
4 days, then powder +
press 30 on 60.

Wea. FRI. FEB. 17, 1905 Ther.

Wea. SAT. FEB. 18, 1905 Ther.

March 16 1905

MgO, moist with Comb K under press & dry — then powder & screen 30 on 60 — Coat flake Mg with manganese deposit out Comb K — & (OH) in presence out Mg by HCl —

... of Comb Mang manganate, contents on heating to [illegible] first [illegible] at,

Ralph to make

Iron by H, then press N until to see if H absorbed. Reg depo test —

Wea. SUN. FEB. 19, 1905 Ther.

Wea. MON. FEB. 20, 1905 Ther.

Speak to you about
dangers of Helvogen in
over Hydrogen & necessity
of a Buffer in the
blood to be overcome
— H or acid gas —

Ortho
Primary phos
or Neutral Sulphate
combined with other equation
do recommend at all degrees
Fever after Bronchitis to
which he has been very
much better than
Phos Lime - Very
high M.F.
formed by pp Sul Mg by
Wisodec phos

Wea. TUES. FEB. 21, 1905 Ther.

Wea. WED. FEB. 22, 1905 Ther.

Phos K melts in its at higher than red, Easily got in white lab -

Trisodic orthophos does not melt at white red heat.

Put 1 gram .0001 in Carat H smooth press 25 atmos, weld in H.

also 1 with 1 gram .0003 — same press

Wet MgO with Boracic acid water

ignite to white

$MgNO_3$ — $MgSO_4$

Mg acetate,

Wea. THUR. FEB. 23, 1905 Ther.

Wea. FRI. FEB. 24, 1905 Ther.

Gwa gwa me Cryst(?)
Ne flake hydroxide.
I will cover it with
Nf flake - 0.001

Try $BaOH_2$ in a
solution of sulphate
of Mn + Am - in
presence of Excess
NH_4 Acetate, NH_4OH
dissolved

Get those amine
Liquids & test how they
$NaOH_2$ & flock hydrat

Wea. SAT. FEB. 25, 1905 Ther.

Wea. SUN. FEB. 26, 1905 Ther.

Try dis $Ni(OH)_2$ in
hydrazine also
$Ni(OH)_3$ also
Hydrazine in $NiOH_3$
Dry & make the
plating of graphite
Co impregnated Ni
also Ni Co —
See claims &
look more closely
to Cobalt alloy
+ Co above
Palladium

Wea. MON. FEB. 27, 1905 Ther.

Wea. TUES. FEB. 28, 1905 Ther.

Uranium Ammonium
Chloride, scales -
treated K +
Red Hydrogen -

Wed Feb 1 1905 -

put in about 2 grms
Cobalt Glass (pot)
make 8 grms in
put them in 21%
with 200 mw density
changing & shaking.
see result, weight
accurately want to
determine how long
use tubes last

Wea. WED. MARCH 1, 1905 Ther.

Wea. THUR. MARCH 2, 1905 Ther.

March 16 1905

pellicles with Nickel
for filter

Manganese (fr and S)
Ag Mo Wo Cr Ur U
Sb Ce Te Cu
Bismuth

Volatilizing by sublimation
a mix of 60 chloride
Co 40 Nickel, either
hydrated, dried, fused
Chlor and a mixture
of so Can reduce by
H + use in Crucible
for sponge

for making flake by
[illegible] electrolysis
[illegible] [illegible]

Wea. FRI. MARCH 3, 1905 Ther.

Wea. SAT. MARCH 4, 1905 Ther.

Nitrates of Co & Ni in
light purple & reduce
by H & roll out,

[illegible] Pa [illegible] organ
is contaminated

see in [illegible] of
get chromate

from O & Chromium

Ni is deposited as a
hydrated OX

along with Lellmann
for flake

Wea. SUN. MARCH 5, 1905 Ther.

Wea. MON. MARCH 6, 1905 Ther.

[illegible] from reading
[illegible] with Na
would be safe for plain

when got 60 C 40 Na
flame marks group
for 5% KPO4, 8%
12% [illegible] 33%
plain with Reg
green molas —
to determine Capacity
& smell — path
in Na & KOH.

Wea. TUES. MARCH 7, 1905 Ther.

Wea. WED. MARCH 8, 1905 Ther.

March 16 1905

Specimen cast deep [illegible]
Chro MgCl2 deep [illegible]
deep organic [illegible] nearly
full. Other book nearly
KOH, till the nearly [illegible]
then back string KOH
decomp [illegible] [illegible],

Co & Uranium - [illegible]
[illegible] of precipt
deep impress of [illegible]
action of light [illegible] colors
[illegible]
Uranate,

Co + Sb in NaOH,

Co + Mg -

Co & Cerium -

Co & Zr -

Wea. THUR. MARCH 9, 1905 Ther.

Wea. FRI. MARCH 10, 1905 Ther.

Cont'd

Spent Dgs -
Phos Tricalcic
after washing HCl &
taking out acid -
put again in HCl &
a long Camp clean
See of his mentions
many dips -
also speak of
Sol of Carb Pot & NaHy
& KOH after a number
dips etc -
Make Shalmed Nij
for pelt not very good

that allows CO_2 or
Cl_2 above it to escape
Not it makes Control
without pressure other
than the own weight
whereas the requires
some pressure to ensure
good Control. This
could be attained
by reversing after
filling but dispensing
with closing more or
less air space or
supporting Cu-cylinder

Try Cl_2 flasks only
if $KClO_3$ chosen if

Wea. MON. MARCH 13, 1905 Ther.

Wea. TUES. MARCH 14, 1905 Ther.

of so-spark Ais

Rugos to Expert on
drawing tit on side
Can despair -

March 22 1905

Try of Acetylene
Ammonia Lisol.
N, O₂ or Propo-
+ of more than water
solution
not so much

Wea. WED. MARCH 15, 1905 Ther.

Wea. THUR. MARCH 16, 1905 Ther.

[illegible] formaldehyde
[illegible] in ice will
dissolve more
[illegible] [illegible] effect
[illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible]
[illegible] and
[illegible] [illegible]
[illegible] [illegible] [illegible]
daily on bedtime,
use 2 oz mouth
[illegible] when dissolving
[illegible] [illegible]
through
1.25% dissolve

Wed. FRI. MARCH 17, 1905 Ther.

Week 23 1905

Wed. SAT. MARCH 18, 1905 Ther.

Daily water some
glass broken and
cracked, then
fell by jerking sue
[illegible] 9.20 - much
of glass in outwards

Hard Caustic
~~[illegible] Barytes~~
wet with Conc
Sulphuric Ac -
Dry & Red with
HN

Wea. SUN. MARCH 19, 1905 Ther.

Wea. MON. MARCH 20, 1905 Ther.

Wax mush H_2O_2
with lime hard
burned particles,
Reduces in H_2, +
slake lime to
make flake

Try peroxide from
igniting Metals
with NH_3

See if H_2O_2 can
NH_3, Can be

Wea. THUR. MARCH 23, 1905 Ther.

Conc by quick lime
fed in solution to
absorb the H_2O
& liberate free
NH_3 which
can be absorbed
in water -

1 Hyd atom may
be replaced by
Mi & the resulting
compound stable
similar free NH_3

Wea. FRI. MARCH 24, 1905 Ther.

Oxy protant
on Co & the Co
in long chain -

Wea. SAT. MARCH 25, 1905 Ther.

April 21 1905

[illegible]

Sodium Co Cl in
glass Vacuum -

[illegible] Alum mixed
with [illegible]
[illegible]
then reduced H
and gave flake Co -

Wea. SUN. MARCH 26, 1905 Ther.

Recrystallized
Cobalt Nitrate
made in Cylinder
4 Nov angst

Phosphorescence [illegible]

Metallic Zinc Sulphide
195 C [illegible]

Warren make some
70 Co 30 Ni flakes
for test as a sheet
00005 0001
0002 0003.
Louis [illegible] put them
[illegible]

Wea. MON. MARCH 27, 1905 Ther.

also 60 Co 40 —

also 70 Co 30 Fe

60 Co 40 Fe by Electly

Sept 25 1909

Wea. TUES. MARCH 28, 1905 Ther.

Ferricy of K & Protoxide Co
pp in thick dark red
flakes Granular

Cobalticy of K forms with
Sol Ni + K fine bright
azure colored flakes

Ammonia-Cobalticy Ni
formed by dro pp Cobalticy
Ni in NH, of Exp
Very slowly deposits
Crystalline Scales =
Granular =

Sesquisulphide Cobalt
graphite Lamaire
Fellenberg (Pogg. Annalen
I 73,
el
igniting protoxide Co
with Sulphur & an alkali

Potassium Cobaltic Sulphate
mixing $CoCl_2$ K carbonate & oxalic
in water to thick paste rolling
mix remove 21 Days black
Lamaire —
Kehrman (Ber, 19 3101 —)

Tetramine Cobalt Salts
The Sulphate Cryohydrate
in Small Scales
Atkin J SIC [3] VI 116 126

Cobaltotetramine Salts
Iodide. $CO_2[NH_3]_8 I_2$
$[SO_4]_2$ Brown Scales
Ba Salt yellow needles
Vortman & Blumberg (Ber
22 2648]

Wea. FRI. MARCH 31, 1905 Ther.

In reducing Cobalt by Zinc part go down in form of easily reducible Metal Copper — Chi Phil, 83

Lecoq de Boisbaudran says CP Zinc does not reduce Co except in presence of excess of metal.

Chloropurpureo cobaltic dichromate, Scribe

Wea. SAT. APRIL 1, 1905 Ther.

Solutions of Luteo Cobaltic Salts — Na pyrophosphate added gives precip of Leaflets insol H_2O or NH_4 —

$3[(12NH_3)\ Co_2O_3 + 5P_2O_5 + 40 aq]$

Try plating Zinc by Double oxalates Double salt of Zn + NH_4 or mixed oxalates Excess oxalic acid ppt found the cleaned by adding NH_4 sulphate mix clean pot with NH_4 or slight excess heat gently few minutes

Classen

Wea. SUN. APRIL 2, 1905 Ther.

Other K Cobaltate
tablets —
CoO dissolved into 500 pts
Mother water. Continue
fusion for some time or
tablets till [illegible]
Cool & treat with H_2O
K Cobaltate mother water
decomposed at 200 C
H_2O then drive out K_2O
& Co_3O_4 remain

Wea. MON. APRIL 3, 1905 Ther.

Barium Cobaltate.
15 grms superoxided BaOH
mixed with 6 grms finely
powdered BaO + fused
to red heat red. 1 grms
Cobalt peroxide added
in small portions.
Continue heat, after cooling
wash hot H_2O & finally
acetic a — Black
damaskac —

Ba Cobaltiny with BaOH
crystals form from mixed
sol in tables
(Wedekind) (Zeit f Chem
[Z] VII 61

Sublimed arsenic forms a mirror on glass, permanganate stains, ammonia clears, in Cobalt solution forms arsenate, then Reduces by H, Expand

$CoCl_2$ on adding ammonia to an alcoholic solution of $CoCl_2$ rose red Leaflets loses all the alcohol of Crystallization

Coe Mfg Co –
99 Johnson St
Sheet Metal

Crystal phosphate of Cobalt
pour into solution $CoCl_2$ a
deal of plus Na_2 in slight
excess. ppt formed blue Cobal
dissolve in 2 parts one
dis in HCl avoiding excess
then add this to the other
1/2 & leave to stand
after a time agglomerated
Lamellar, beautiful Violet
The chemist 1856

Wea. THUR. APRIL 6, 1905 Ther.

5 20 pm

105 7/8 miles

Elizabeth 6 pm

Rahway 6 28

Manto 6 43

New Brunswick 7 15

left 740

Wea. FRI. APRIL 7, 1905 Ther.

New Hol grid 328 pm

Highlestown

840

Trenton

930

left Trent 1030

Camden 930

Wea. SAT. APRIL 8, 1905 Ther.

Counter reads
211 — at Camden
320

130 pm
left Camden
" Trenton
420

New Brunswick 555

Wea. SUN. APRIL 9, 1905 Ther.

109 - miles -

130 730 5h31
6
next 1.30. 730

5h30 Run

330. 5.5/109

6/109
18.16

Wea. MON. APRIL 10, 1905 Ther.

May 7 1905

[illegible]

Also Ni 70% Bismuth 30
" Ni 70% Copper 30
Co 50% " 50%
Fe 50 " 50
Make the Fe Cu —

[illegible]
Co "
Cu "

Make some [illegible] Co
also a Ni plater
& sulphuretting
H S for [illegible] cubes

Wea. TUES. APRIL 11, 1905 Ther.

Start full size drum
for plating —
also Elec furnace to
make connections for it.

Fred will take apart
one of the worst Siemens
big Cell 3107 engines
on Long Changes.
Remove the Nickels
plater & try vacuum
Experiments —

Carmanta
Make a new C Soc Jal
22 188 —
Allen. 1st 2nd 3rd Pres
Sec. Carmanta

Wea. WED. APRIL 12, 1905 Ther.

1 Hydrocoln MP 59
2 An alcohol $C_{29}H_{58}CH_2OH$ MP 85.5
3 Myricyl alcohol $C_{29}H_{59}CH_2OH$
MP 88.5
Myr. Stearic ester $C_{29}H_{59}(CH_2OH)_2$
MP 223.5°
5 an acid $C_{23}H_{47}COOH$, MP ~~79~~
78.5. Lignoceric acid
Lignoceric acid
6 an acid $C_{26}H_{52}COOH$. MP 79
identical or commence with
Cerotic acid

Stinde
(A 223 314

Sea. Herad 18 [illegible] 9 41
Mauthner Ch 7 87 [illegible]
Beilstein A. 183 314

Wea. THUR. APRIL 13, 1905 Ther.

Re Cpd. Ch.
Sample 4 1/10 1/10 N.H.4 Co
Pamp Sam 1. .24 of 1% "

To soak Cups in Rodinary agt
Chloride Tin fresh - Hot
Aldehyde -
NH Sulphide -
Ferrous Sulphate Hot
KOH + Hydroquinine a
Cerium Ammonsulphate
Hypophosphate
also Mercuric Chl in Ethos
Ferric Chl in "
NH4 antiq in Alcohol
Ferric chl " Wat

Wea. FRI. APRIL 14, 1905 Ther.

Left 5 45 cem

449 meters

Hackelbrum 915

under,

491 — 42 meters

3 hours 30 min

Left

610 am

510 meters on Cycles

8 am Hackelbrum

10 meters gone Cement to H

Wea. SAT. APRIL 15, 1905 Ther.

Nitrate for normal salt dis

Metal in HNO_3 SG 1.29 Cold

take up 10% add equal vol

Nitric a SG 1.43 Sol in

Cooling deposits salt, filtrate

Lavender blue,

Thos salt dissolves 2 3 6

8 12 & 24 indicates Ferric oxide

all Sol in water

Neutral Oxalate Ammonia

dis oxalate Ni - $NaCl H_2O$

Wea. TUES. APRIL 18, 1905 Ther.

Wea. WED. APRIL 19, 1905 Ther.

Cobalt ores -

Mineral Hill Maryland
in Chlorite slate with Copper
Cryst 25% Co

At Potapsco Mine near
Finksburg Carroll Co
& at Spring Grove Pa
Cryst 37% Co 10% Ni -
Called Cornwallite

At Chatham Corners as
Chloanthite (Chloanthite)
occurs in Mica slate
with Arsenopyrite & Bismuthite
Co variable from 3% to 20%

Smaltite, is name of
Cobaltiferous Arsenic
pyrites as Mineral
found at Franconia N.H. in
gneiss associated with
Calcopyrite

Wea. THUR. APRIL 20, 1905 Ther.

Wea. FRI. APRIL 21, 1905 Ther.

Cobalt

also at Jackson & Haverhill NH,

Redwash Dakota Co
Contains Cobalt, sandstone
2% Co —

Some Carbonate Manganese
near Co, [illegible] 18% Co

Bibb Co, Centerville, Alabama
Cobalt,

Wad. Manganese -
Cobaltiferous - near
Silver Bluff South Carolina
2% Co [illegible] 76%
Mn O.

Wea. SAT. APRIL 22, 1905 Ther.

Wea. SUN. APRIL 23. 1905 Ther.

Remingtonite, Carbonate
Cobalt, occurs as a
Coating on thin veins
of Serpentine which
traverse hornblende
Epidote at Copper mine
near Finksburg Carroll Co
Maryland

Khetri Mines, Rajputana
India, Cobalt ores -
(Jeypoorite) Jaipurite) -
Records Geol Survey
India XIV pt 2 190
1881 - Thermonatite
Cobaltite, Danaite,
Cobalt occurs in Coal
in the ash -

Wea. MON. APRIL 24, 1905 Ther.

Wea. TUES. APRIL 25, 1905 Ther.

½ miles from Bulkhead 1822
Sand drawing on side road
altered sand -
in places hard ferruginous
sand the sand is
cemented together by
Cobalt & Manganese
Color black weathering
to blue, slate color.

In a manganese ore
from Virginia Co is
found

Wea. WED. APRIL 26, 1905 Ther.

Another Silver Harbor vein
on West side Chocolate Bay
Connected now only
prospecting Silver & Nickel
& some Cobalt, — Huronian
Talcose rocks,
Vein Quartz & native Bismuth
varies Tuff includes here
2 ft wide.

Copper at Jackfish Lake
at Sheba and low and
one containing the Copper
from Huron Bay where there is
a promising vein, varying 9 to 10
% Ni & Co — $140 per silver.

Ni & Co have been found — the
Manganese deposits
of Gordon Cummins on Gordon Co.

Wea. THUR. APRIL 27, 1905 Ther.

Perm Survey Vol Chem and
p. 194 from pre opening near
Dactilla on North W slope
of Jack's Mountain —
(Ground Tourmaline)
Botryoidal —
25% Proto 7% 27 Hydro & Brown
Hematite
Co_2O_3 0.580

Blair Co p 197 McCaulley Rep
Chem and —
Co_2O_3 0.116 Baker & Bank

p 209 — Chestnut Hill mines
Co_2O_3 0.185 .130 . 047 . 066

p 213 Trenton RR Co mine Trenton
Oxide Cobalt. 0.390
has some peroxide

Wea. FRI. APRIL 28, 1905 Ther.

p 218 Sawyer Iron Co mine
0.140 Co_2O_3

p 371 Collins Quarry
Co_2O_3 0.170

Smuggler Val McCormick
Per Year Samples
p 1 = Franklin Co -
Richmond furnace mine -
Co_2O_3 0.390. McPleasant
Beaver 0.130
Co_2O_3 200.

Page 2 Carrick furnace bank
over Co_2O_3 .250
Railroad bank. .280

Page 3 = Geo Weinmann Mine
Co_2O_3 .390

Wea. SAT. APRIL 29, 1905 Ther.

p 4 - Webster mine
Co_2O_3 0.510

Stinger Mine, 0.390

Garlic bank mine 0.120

McCleary .180 Geo Rock
0.130 Pass Orchard .190

p 6 = Mill bank
Co_2O_3 .240

p 7 = Mont Alto Iron Co
mine 3 Co_2O_3 .250
~~4~~ .250
5 .220
6 .370

Nearly every mine in Franklin
Co got Co_2O_3

Wea. SUN. APRIL 30, 1905 Ther.

p 14 Means mine
Co_2O_3 ·570

p 15
John H Crealer Co_2O_3 ·420

p 18 South Mountain Mining & Smelting Co
Lowrel No1 - Co_2O_3 ·520

P 26 York Co -
Shelly & Haffey Co_2O_3 ·334
Logan ·766 ?? of sulphide
Cobalt,

Most of the Wad or bog
Manganese of the Limonite
Ores of Northumberland
Lehigh Berks & Mont gomery
& other Co Counties Cobalt

Wea. MON. MAY 1, 1905 Ther.

A large deposit of ferruginous Coballiferous
Variety occurs according
to Prof Roepper [Private Com]
near Alberties Lehigh
Co at the mine of the Nicholas
& Harding Cobalt Co.

A Coballiferous manganese
containing according to
Theo D Rand 10% of
Cobalt has been
observed by him in
the lower workings
of the Drift opposite
Fairmount West Philadelphia

Wea. ~~Tues. May 2, 1905~~ Ther.

~~At Cornwall & Lebanon~~

~~Also~~ Caballeros Ward

in Williams Township

Washington Co

(Had at Cornwall Lebanon Co

Cobalt found at the

Mine LaRiette - & Old

Copper mines in Madison Co

Missouri & also at the

St Joseph Mines Mo

Wea. Wed. May 3, 1905 Ther.

April 27 1905

Continued from other book

Says New York patent idea of

~~blowing up pressure to 16000 lb~~

Crushing point of Cement,

Patent Method of separating Mn

from Co, by reducing Lime

Mn oxides & dissolving out

the Mn by Kly & recovering

the second —

Use of 3 patented processes

of grinding up ores & separating

Fe & Co & separating them

separately to the market purchasers

& another process & then

Oxidizing Roasting by reduct

then reduce by Mn,

Wea. THUR. MAY 4, 1905 Ther.

Run my new process
15 ~~2~~ 2# ~~4~~ 40 % Cu
with 8 Ag work for 20 - 40%
Reg for 1 hr —

Run all the good groups
above 950 —

also some very the missing
group with Cl powders
for Cu —

Group heavier range
on — twice as heavy
+ 500% heavier —

Wea. FRI. MAY 5, 1905 Ther.

Some device to secure
out Zinch in amalgamant
of 50 Tumps so will
alike —

Make several groups
with Nickel 1 ft lb
Mn on Copper - dissolve out
by air + ammonium + a salt
the Cu + Copper —

also passing H_2S thru acid sol
containing phenolsulfonic
sheets - dps MnS by Ferric Sulfate
or Cupric Chloride
can use the 1st part as
from of Co + reduce Co
with H to stop stickling
use same electrolyte
Ni flake as Co next
week —

Ferrous sulfate also McCallie
Sulfat. Cu in neut sol
alkalides, metallic Cu
being reduced to Cuprous
Sulfide, air oxidizes it
to basic Cupric sulfate.

Copper removed in Cupric
sulfate solution with
ammonia by displacing
until all the Cupric sulfate
is reduced to Cuprous sulfate
Sol should be diluted with
deaerated water & closed
up —

Very Conc Monosulfide K
attacks Copper in presence air,
forming Cupric Sulfide thus
displacing the Cuprous
sulfide & sulphur then it
forms a double sulphide
of Cu_4K Sol in the solution
The action 1st formation KOH &
Cupric Sulfide. then no fast

as formed splits up into
Cuprous sulfide which
forms the double salt
$K_2S + Cu_2S$ + the sulphur
which forms polysulfides
Chem Soc Jnl 963
1046 1884 —

Treat flake by KS fully
then ox sign the CuS
by K ferricyanide in
alkali. also by H_2O_2
hypo etc to form sulfate.
Cu Sulfide combines with
Na Hydrosulphide to
form Double salt Sol
in Na S NaOH,
555 Chem Soc Jnl No 52

Wea. MON. MAY 8, 1905 Ther.

CuS does exactly on acidulation thiosulphate solution forming Cupric thiosulphate and evolving H_2S as exceptional insolubility

CuS does not form thiosulphate

CuS forms Sol double salts with Thiosulphates.
Thiobenzoic

~~[illegible]~~

Hyposulphite Soda does Cu with the Thiosulphate Copper can thus be prep by Na Sulfide which regenerates the Thiosulphate of Na
Solution is due to production of double salt

Wea. TUES. MAY 9, 1905 Ther.

1 litre containing 20 grms of Thiosulph. for a glass solution 100 mlg Copper but not Can be continuously run through a Cu prep by KS + Thios regenerated —

Frog Hb Platinic in acetylene makes Cu acetylide —

Hyacinth from 74 mg — Dried
ash 13.8 %
2.55 ammonia
0.41 phosphoric acid
0.70 Potash —

Wea. WED. MAY 10, 1905 Ther.

see Cabarrus and Lincoln & Gaston Co NC

Prof H Wurtz
Amer Journal Science
XXVII p 24 to 31

Rogers to make some strips with more open (x) under perforations so Can use 004 to 004½ or 005 slide-fed tubes—

well
Morrow to at Pine Orchard
Tuesday 17th or 18 May

Wea. THUR. MAY 11, 1905 Ther.

Gaston + Lincoln Co NC – Wurtz.

Talcose + Quartzite schists crosses south fork Catawba River a little south of line between Lincoln + Gaston Co's in vicinity of the Falls called "High Shoals of the Catawba"
This belt many miles long direction N. 20° E varying in places due N + N 35° E at High Shoals is 3 or 4 miles wide everywhere traversed by veins quartz carrying pyrites + other sulphides showing on surface limonite Gossan Veins all kinds strike + dip, most important ones conform to general strike, dips generally vertical
Proceeding Northwestward from High Shoals into Lincoln Co along belt of Talcose + Quartzose Schists many places seen where gold mined Shuford + Carraler mines many miles in distance but apparently same range, high elevated with Graham Co's blank, fragment,

of Lunsonite Gossan + honeycombed
Quartz constantly seen on surface
sometimes isolated + sometimes
strewn along considerable
distances marking outcrops
In this part of the range the quartz
veins usually contain where ever
opened more or less Galena
Blende & Chalcopyrite usually
with Native gold + in one place
rutile
Going southwestwardly from the
river we find the rocks presenting
similar indications + in course of
some 15 miles we encounter
successively the Long Creek gold
mines from the Ashbury shaft
of which much gold has been
taken + a number of places
where Iron ore to 27% has been
found known as Costner
Ore bank Allison Ore bank
Ormond ore bank Ferguson
Ore bank Briggs Ore bank

a few miles beyond the latter
not far from the same range lies
the well known Kings Mountain
Gold mine so called Greenstone
Trap dykes are occasionally
encountered running parallel &
sometimes across the strata
The beds of the streams frequently
contain pebbles of Black
Tourmaline & Black sand
Numerous veins or rather strata
of Black Tourmaline seem in
several places usually veined
with white quartz veins of
pyrites found crossing streams
where current washes bare
other places soft banks of
Limonite forming standing
above ground —

At Allison & Costner ore banks
which are excavated in strata
of ore 30 to 40 ft wide the waste
material was a true
Magnetite Schist mixed with

Wea. TUES. MAY 16, 1905 Ther.

Wea. WED. MAY 17, 1905 Ther.

much limonite
throughout the whole range
as I have examined. The Talcose
shists were found to contain in
numerous places small
seams incrustations & stains
of a black substance which
gave blowpipe reaction for
Cobalt.
At all the mines the ore was
coated more or less with
the blackish substance
at Ormond Ore Bank Especially

At Asbury shaft of the Long
Creek mine masses of quartz
thrown out of mine were
thickly incrusted with
mammillary masses of this
Wad or Earthy Cobalt

It cannot be doubted
but that its the Gossan of
some Cobalt-Iron Sulphide
as no arsenic was detected

Wea. THUR. MAY 18, 1905 Ther.

Wea. FRI. MAY 19, 1905 Ther.

It is soft unlike Earthy manganese smears the fingers & can be cut with a Knife. Exhibiting in sections the lustre of Compact graphite. The Country people call it Black lead

A Spot about a mile in Northeasterly direction from the Long Creek Mines I found Crossing at right angles the road from Yoncalutch to Yorkville in South Carolina where the latter crosses over an Elevation called "Cross" or the "Parsons Mountain". The outcrop of a large vein or stratum of rock which contains very much of this black graphite or Wad It cannot escape the attention of a person travelling along the road as it appears like a broad black band on the side of the hill

at this spot it is 15 ft wide
a small opening was made in
it 3 or 4 rods from the road
on the southern side & found to be
12 ft wide included between
walls of talcose slates.
It was traced & opened again
1/2 mile southwestwardly
from the road & found to
~~the~~ consist there of a number
of parallel strata separated
by seams of talcose shists
one or two feet wide, the
largest of these strata was
10 ft wide, presenting a solid
wall of Lumonite mixed with a
little quartz & so compact
that it was difficult to break
with a pick

Following the Corkville road
southerly from the point
where the vein crosses it
is found interstratified
with talcose shists. Hatchment.

Wea. MON. MAY 22, 1905 Ther.

Wea. TUES. MAY 23, 1905 Ther.

following the vein northwardly from the road the outcrop was found to descend rapidly along the western slope of Cross Mountain & at about 1/4 mile from the road was found a spot where the ground consisted in great part of fragments of black Cobalt from Wad like substance. Opening made here would probably lead to interesting & valuable developments. A Determination of the quantity of mixed oxides of Cobalt & Nickel contained in the Wad at this spot gave 13 percent

The Cross Mountain Gossan was found by qualitative analysis to contain in addition to Co & Ni —
Mn Fe Cu Bi Zn Ca Al Mg & Si

Mineral from the Ashbury shaft gave Fe Mn Co Ni Cu Bi Zn Al Si Ca Mg & traces Tellurium —

The substance from Ormond ore bank may be called Coballiferous Earthy Manganese granular & Amorphous

Hausmannite gave with HCl deep black or brown solution — The Ashbury shaft & Cross Mountain medevals gave deep green solution becoming yellow when diluted which is characteristic when much Cobalt is present

Hellmuth of these veins are opened down to unweathered Zone strike Sulphides Galena Sphalerite Siegenite & Sulphides of Co & Ni + in quantity

Wea. FRI. MAY 26, 1905 Ther.

Wea. SAT. MAY 27, 1905 Ther.

This minerals found at Mineral Hill Maryland —

Massive Manganese garnet ??
found at High Bridge Jefferson Co

Some development in Metal
Mine at Hemlock Floyd
Co Virginia —
Arsenic Mine near Rewald
Post Off Floyd Co Va

Madison Co NC near warm
springs belt 8 miles long
1 to 3 miles wide —
Light blue Manganese ore

Caldwell Co NC 5 miles
west of Lenoir, also
Perkins Mine, 10 miles
West of Lenoir
also 10 miles North of
Dobson in Surry Co

Wea. SUN. MAY 28, 1905 Ther.

Wea. MON. MAY 29, 1905 Ther.

Noted locally for Serpentine occur in Wake Co NC

also at near Asheville in Forsythe in Macon Co Jackson, Yancey Polk Mitchell Co

forest beds are near Patterson Caldwell Co NC

~~Also~~ Wad occurs near Murphy Cherokee Co also near Franklin Macon Co & Webster in Jackson Co

Large vein of Compact Graphites occur in Gaston Co NC

Unexpected Corundum Cos Mining Gold mines Graphite occurs near Cooper Gap

~~Also~~ Watauga Co NC in the Crystalline Schists disseminated through Sills in Rock

also 1/2 mile W Blue Ridge gap
in Mitchell Co 2 to 4 ft thick
Earthy — also in Nash Co

Jackson Co Chatham Co
in South Carolina
at Dorn Lands near
McCormick —

Noticeable Locality of Mn
near old forge on
Crowders Creek on West
bank Crowders Mountain

Silver Bluff S C occurs on
surface of Coarse gravel
~~[illegible]~~ to fed from andesite
has 35% CoO_{2}
65% MnO_2

Wea. THUR. JUNE 1, 1905 Ther.

Wea. FRI. JUNE 2, 1905 Ther.

Vein of Pyrrhotite in Caldwell Co N.C. 5 miles W of Lenoir. Embedded in Gneissic Slates 3 or 4 ft wide.

Small seam in town of Danbury Stokes Co N.C.

Red Manganese Garnets are common of great thickness. There are a series of 62 dks associated with Kings Mountain slates at Gastonia Lincoln & Cabarrus Cos N.C.

51.46 Mn O 12.98 Mn C 5.6

alt 72 30.44

Blue Limestones found in King Mountain slates intercalated

Wea. SAT. JUNE 3, 1905 Ther.

Wea. SUN. JUNE 4, 1905 Ther.

Manganese is found in Greenup Co Ky Ky — Serpentine or rather serpentine is found in Elliot Co Ky

Oxide Co occurs on Brown Hematite or from Chester Ridge 3/4 mile West of Chester Greenwood Hemlock Co Penna Surface ores in place Covered with their Lagers Cobalt oxide full account Proc Amer Phil Soc Jany 1846 IV 239

Wea. MON. JUNE 5, 1905 Ther.

Iron ores of the Shenandoah Valley
many miles show following
specimen analysis
~~70.~~ 70/2.63
Co-Al2O3 - .130 - to none
The .130 is from 70%
Manganese Brook Shenandoah
Iron Co Rockingham Co
These ores are in Potsdam
primal formation, Mg Ca
Potsdam Stratum
along same lights as old ore
is Manganese ores the
Cromore for manganese
Cromora has .354 Co2O3

Largest deposit of [illegible]
for Sheaco. [illegible]
Carroll Co Va
20 miles long

Wea. TUES. JUNE 6, 1905 Ther.

Refers
17th of Pueya
ores.
J. G. Reinhardt
Lynn Sta
near his place on the Shenandoah River
W. A. Mooney
Kings Mt Va Mage
Posted about the County

smallest towards
Grayson Mt
60397/8
1st 6046 5/8 Sample

Wea. WED. JUNE 7, 1905 Ther.

2nd sample is weaker
The wedge is thrust along
side wall.

Wea. THUR. JUNE 8, 1905 Ther.

Working Ammonium Coors

Roast, dissolve HCl, add Bleach
then ammonia Ammonium to strongly
ammoniac dissolve keep it
acid sump & crystals as out
Co & Ni Solution — Conc Sol.

Dissolve ore in H_2SO_4 add Bleach
Keep Sol in Excess, still Co & Ni
formed $CuSO_4$ pure sp. of Cu
& Zn sp & crystallizes (keep
Solution and add little fresh
HCl, any undissolved
residue Redissolve, Conc Sol
neutralize Lime Bleach use
Hypothio —

Make tubes thimble flake Ammonium
also thimbles 75 double tamps.
all Ni tubes 6 of 2 inch
with millboard alternate coating
4 rings.

Reg Coffinlake 6 tubes 4 rings each
3 rings on before pkg 3 after pkg

Tried other way up two plungers (good)
[illegible] other [illegible] grown [illegible]
[illegible]

[illegible] long
out -
[illegible]

6 tubes Ni -

Got 30 gallon still deep
for [illegible] drawn Vacuum
pump - make still [illegible]
Modelling records -

3 Frontubes change soak
water + alcohol press wood
+ feed wood [illegible]

Nickel flake -

Hyposulphite soda 20 grms
to litre drankers 100 mily
Metallic Copper - They dope
be precip by Na Sulfide
which recognizes the
Hyposulfite. it solvent
action due to formation
of double salt, Can make
a Continuous system flow
using which dissolved [illegible]
with Fellows Co or Hi
flake made by Copper
process

Dust extend over Falls
New water jacket but
separator -

Wea. SUN. JUNE 11, 1905 Ther.

[illegible] 6 in pole 1½ [illegible]
rec. 13 [illegible] quarts
dille [illegible] 500
75 Double T in 4 rings
Ni tubes, ½ of each 6
rings before other half of
rings after other half

Plate some 6 strips with Ni
to ash 1 in Hino H. Cut 6
flocks make 6 tubes
75 DT - 4 rings 3 offs
ex 3 half of other

Hopper changes new Sprayed
Double [illegible] for Kelvin

Wea. MON. JUNE 12, 1905 Ther.

Wea. TUES. JUNE 13, 1905 Ther.

Wea. WED. JUNE 14, 1905 Ther.

New Tubes

1411 Tamp rod 15/1000 less 6.575
1412

1413 Tamp rod 30/1000 less
1414

1415 Tamp rod 60/1000 –
1416

1439 –
7

1442-3 – Hole drilled thru Center

1444-5 bars filled so Twice as much open
6.602

1446-7 more filed off old bars 2000's
6.564 – 7.377 –

1448-9 Spiral Tubes 4 springs
6.820.

1450-1 – Spiral Tubes 2 springs

1452-3 2400 perf bars 1/2 filed off
6.200

1454-5 2400 bars all filed off –
6.100 –

1456-7 Regular 2001 perf
6.300

Wea. THUR. JUNE 15, 1905 Ther.

1458-9-Regio No 2 perf
6,200

1460-1- Ringoro 1 perf-back part - not once
6400

1462-3 Regem No 2 perf "
6400

1464-5-6 - Ringoro 2400 folded off
Reg plumpi, bofore two - style one
flake [illegible]

1467-8-9 Ringoro 2400 folded off
style 2 flake [illegible]

1470-1-2 Reg plumpi No 1 style - Ringoro 2400

1473-4-5 Dup of 1470 - No 2 style -

1476-7-8 Dup 1470 No 3 style
flake off - open before green

1479-80-81 - Ringoro 2400 - bofore leaves
Home Reg plumpi Nickel flake -
Style 1 -

1482-3-4 - Dup of 1479
Except Style No 2 No flake

Wea. FRI. JUNE 16, 1905 Ther.

1485 - Ringoro 2400 - Reg plumpi
No flake Style 1

1488-9-1490 - Dup of 1485 - No 2 style No

1491-2-3 Dup 1485 except 3 Style No

1494-5-6 - Co - green 1 week before
Expiry - No 1 style - 7,700

1497-8-9 Dup of 1494 - No 2 style 2400 Ringoro
7,8

1500-1-2 2 weeks expiry green Ringoro Co
2400 - No 1 style

1503-4-5 Dup 1500 - No 2 style Co

1506-7-8 - 3 weeks expiry - Ringoro 2400
Reg plumpi - No 1 style Co flake

1509-10-11 - Dup of 1506 -
Except style No 2

Wea. SAT. JUNE 17, 1905 Ther.

1512-13-14 – Reqpu 2400 (beer grown
style 1 – to be changed 10 hours
reat 10 hours chip 10 reat 10
chip 10 then ch. to chip reqpu
with req thereafter –

1515-16-17 Dup 1512 beat
style 2 –

1518 Reqpu 2400 beers off –
10 Co flake –
24 grown then 60 mesh fine
in – Req pleenqpu.
Style 1

1521-2-3 – Dup 1518
but style 2

1524-5-6 – Reqpu 2400 beers off –
10 Co 24 grown then 60 mesh
Style 1

1527-8-9 Dup 1524
Style No 2

Wea. SUN. JUNE 18, 1905 Ther.

1530-1-2 Co – 10 – grown 21
chinook 3 – then 100 mesh
grown + KCl merged
Style 1 –

1533 Dup of 1530 –
except injy 3 strokes in KCl to pellet
100 pts flake 30 pts KCl –
Style No 1

1536 – Reqpu 2400 beers off –
3 : 3 Ni flake 8 crossathno 20 –
Style 1 3 sections then lamp –

1539-40-1 – Reqpu 2400 beer off
5 flake 12 grown – 2 sections
put in Style 1 then lamp –

1542 – dtto –
5 Ni flake 12 grown put in 3
sections style 1 then lamp –

1545-6-7 Dup 1542 except # 3 c
then lamp –

Wea. MON. JUNE 19, 1905 Ther.

1548-9-50 — Dup 1545
Except part in 6 weather than
Temp — Style 1 —

1551-2-3 Dup 1530 — Rain —
10 Ni flakes 19 grain & 20 both
mixed Reg plunger

1554-5-6 new weather Temp
10 Ni flakes 24 grain — Rain

1557-8 — 2 flat pkts Chg 3 to dis
500 — Rain

1559-60-61 — Rain.
10 Ni Stiff chicken
24 grain — Style 1 —

1562-3-4 — Dup 1559
Style 2 —

Wea. TUES. JUNE 20, 1905 Ther.

1565-6-7-8 — flat pkt —
405 to Vanadium fine —

1569-70-1 —
10 Ni 24 g — Rubber check plunger
Style 1

1572 — Rain 24 no —
10 Ni Thick — 24 gr Style 1

1575-6-7 10 Ni 1/2 Chick —
Thick — 24 grain Style 1 —

1578-9-80 — Rain — plunger
fine weather 10 Ni 24 grain
Ni Cracked XXX many weatherings
Style 1

1581-2-3 Dup 1578 Style 2

1584-5-6 — Rain 24 no —
Reg plunger chg 10 no at 10 chg
10 Ni — Style 1 —

1587-8-9 Dup of 1584
Style 2

1590-1-2 Pumpkin [illegible]
10 hi 24 [illegible] pleasant 60/[illegible]
[illegible] clay 10 [illegible] 10 clay 104
[illegible]

1593 Dup 1590 Dup [illegible]

1417-18 potato [illegible] clay
2 [illegible]

1401-2 clayed [illegible] 2
[illegible]

722-3-4 Received Spot
24 hours - or cold
Chem run neg - old
tube - not washed [illegible]
glass [illegible] originally

1595-6-7 Dup of 1467
Run — 33%

1598-9-1600 Dup 1467
except Ni fl Clarke
Run — 33%

Wea.	FRI. JUNE 23, 1905 4	5	6	7	Ther.
1464	962	986	1010	1025	
65	990	1005	1027	1042	
66	1002	1020	1041	1060	
67	1040	1045	1061	1087	
68	1038	1045	1057	1070	
69	1030	1032	1050	1063	
1470	1020	1020	1037	1055	
71	1025	1023	1042	1057	
72	1025	1020	1037	1055	
1473	1037	1015	1030	1045	
74	1022	1017	1032	1047	
75	1046	1047	1055	1070	
1476	1007	1005	1020	1035	
77	1028	1025	1040	1060	
78	1023	1020	1035	1050	
1494	948	1017	1047	1067	
95	938	995	1025	1037	
96	990	1065	1097	1107	
97	980	1062	1090	1100	
98	912	977	1010	1020	
99	756	850	885	900	
1500	1000	1012	1003		
1	1050	1062	1055		
2	1070	1087	1075		

Wea.	SAT. JUNE 24, 1905 4	5	6	Ther. 7
1503	1085	1100	1087	
04	1110	1125	1110	
05	1090	1107	1092	
1506	1070	1085	1070	
07	1072	1095	1080	
08	1062	1085	1071	
1509	1042	1052	1046	
10	1055	1070	1062	
11	1040	1035	1050	

Wea. TUES. JUNE 27, 1905 Ther.

group

Aug 2nd 1905

60/1000 less hole. $\frac{1}{16}$ ft –

Dispense boat-springs with flat feed strip

Wea. WED. JUNE 28, 1905 Ther.

Wea. THUR. JUNE 29, 1905 Ther.

Wea. FRI. JUNE 30, 1905 Ther.

1 = John G'll drive pile fellow for cut tube, the big machine to be on upgrade

2 = Establish test for economy on short pocket's reg mix —

3 = Conduct economy tests on the mix made by varying the mixing

4 = Test economy of Venadium iron

5 = Group with silk mixed with flake

6 = make 7c amalgam sketch fig off in line — make amalgam sketch fig set in H_2O —

7 = 7c electrodes with 20 33 4 10% copper — also other mixing ratio% test with 50% H_2O —

8 = Make Coffin deal now by non rod under water KOH, by pressure current,

9 = make iron by grind & dry portion
Electrolyze heavily, no black powder

10 = Make some Cobalt same way as
Ni make iron, oxalate & ct reduce
by H2 test with iron as exhibition
of Co.

11 Make iron by igniting Hematite,
also Metallic Ko Metal Co

12 Fuse Sulfide Fe with K Nitrate

13 Fe pockets with Fe make iron
Nickeled iron in iron pocket

14 = Group Tubes ~~Hg~~ dry reducing
MP CaO 8.5

15 - plate Zinc on Magnesium plate
from Zn KOH + Sulfate K -

16 = Group test ~~chlor~~ dry pkg
Change 10 test to Elec with
4 lb — 4½ ~~x~~ 5 - 26 drop 15.
Sections —

17 Make good group fine test
point of Cobalt chg a per of Ni
to 75%

18 make some dioxide of Fe +
form FeO with KOH by Electrolysis
O

19 Polish by heating the iron ox
burning sulfur + [illegible]
and heating into powder forming
Triple oxide

20 Pock Tube with iron make FeS
7+3 Ni finke + alternate
also Ni Bisulfide Fe
also FeS + Hg O — [illegible]
Magnet swell + burns prom.

21 [illegible] with Reg Fe very 10 20
+ 30% Cadmium hydroxide -

22 Make Cd hydroxide + Hg
pocket. dilt. ~~Hg~~ Cd
Metal red iron + Hg
also amalgamate Cd with Hg
test Cadmium

Wea. MON. JULY 3, 1905 Ther.

23 — Try Cobalt flake strips.
20 [illegible] also 60 [illegible] under
4 Cobalt flake [illegible] Ni

24 3 packets with 7 & 5 + only reduced
5 by K [illegible] packets
not well, [illegible]
[illegible]

25 group well black [illegible] Ni
[illegible]
Brunnich [illegible]
Chg to rest to [illegible] style [illegible]

26 See of plate, 7 & 5 [illegible]
5 [illegible] K in Rott
[illegible]
[illegible]

27 Try regenerating old cells
Chg to rest 14 & to [illegible]
40 hours chg —

Wea. TUES. JULY 4, 1905 Ther.

28 New group best style pky
Chg to rest 10 chg 2 to rest to
[illegible] of rest 10 [illegible]
[illegible] rest 10 — also Ni flake

29 Dup of 28 best [illegible]
[illegible]

30 Dup of 28 Rott, [illegible]
Ni flake Cup

31 [illegible]
dup [illegible]

32 Tubes packed with 7 & 3
[illegible]
[illegible] in Cobalt [illegible]
[illegible] of [illegible]
[illegible] Rott.

33 Inspect Battery building

34 See Billy Bee

35 — group with grathes
pure Nickel

Wea. WED. JULY 5, 1905 Ther.

36 Answer about Circular (Wed) for last Sat. [illegible]

37 = Grassley to take up Cobaskong Irrig. co/AR

38 = 1½ horse, Wakel sheet for Tasling

39 = Find out limestone condition at Cement distr. divide

40 = See Condition Cabnell plant Silver Lake

41 Ralphs having some [illegible] [illegible] 9 Cp [illegible]

above quote No 6713 6714 without Hg given 1st run 1300 av

No 6699 6700 given 1766 – av with Hg –

Wea. THUR. JULY 6, 1905 Ther.

Dyer – Have complete Volumes of English & German patents. See Thomas for address Betts

[illegible] patent now 12.6

[illegible]

Sure Kell – Now Hem up –

Vanadium free iron shunts on 2nd v run – Have Ralph make some non pyroporic see if it aint good if want to be certain Thanks

Wea. FRI. JULY 7, 1905 Ther.

[illegible] KOH, to develop [illegible] color [illegible] if no trace O-

Could make plate [illegible] by adding [illegible]

[illegible] light -

With no [illegible]

also Fe Vanadium free

Change then Fishchang

Wolff Ethylchloy &

reformula. +

Look at Curves

of Fe where used

light - medium

& heavy prints

Wea. SAT. JULY 8, 1905 Ther.

make some Fe plates

like 102 also Copper

OX plates - Use

Oxalate Iron mix

with KOH - gum T

heat also mould

with grid on Cantlay

(1e) piece of perforated

1905 Iron

Test Economy on Fe

packets 3 g of 15

+ 6 gram -

Test Coplated Lumbo

with Fe - Economy

group the
old Reg glucose
map but now square
feed 150 section —
Thro 60 & Thro 40

---

plate Ho 7a Ho 7a
1/10000 — Thin cut up
.005 squares —
make a lens —
in pocket —
~~[illegible]~~
Con 7a —

Make phosphorus
Iron in click
& reduce by
Current pdc of
Coherent.

Melt oxide Iron
prolo —
also Mn of 75 Fe O
& 25 Si O —
melted together

Run Cat Ni plate
00010 Ilno H –
It seems to better

Melt Ferrous Ox
in plates, reduce
by H, self heat,
also with grid in

also melt single
oxide + pass well
internal plate.
Reduce by H,
self heat.

Dr Gratto see of Ag
Ag in last rotten
Quartzite from
Wilson –

Melt some CuO
in Oxygen Coal,
Vulcan, Leland.

Try Reg Fe in
Iron pocket not
Ni plated –

Wea. THUR. JULY 13, 1905 Ther.

Precipitate Fe SO4 [illegible]

Aluminum [illegible]

Then [illegible] dry then

Moulder steadily &

press on [illegible]

& test in pill

also wet with KOH

& ignite to Coke here

& test

Try no binder for

ferric from oxalate

Mount ferric hydroxide

ignite — & Reduce by H.

Wea. FRI. JULY 14, 1905 Ther.

Wheatstone bridge OK [illegible] 1060

group 500 mily 500 "

" 1000 "

2000 "

4000 "

10000 "

Economy etc - tests

Sifter machine for Tamping

is OK & can make tubes

Every time around 1050

Put group 5 up with

Cutting from Reverse

twice every 50 Runs

Co flake —

Dilute Nitflake Thro H

Wea. SAT. JULY 15, 1905 Ther.

Mould around a spread with bare, 3% nitric ferric ferrous oxalate reduces by H + heat — Water — Unmodified Impressions free

ditto but brown to non Appro state,

~~ditto~~

Take ferric Ve + Wo free mix sulphate Ve to equal 30% of the Ferro oxalate + reduce by H Requires very acid heat, No Hg —

Wea. SUN. JULY 16, 1905 Ther.

Reduce oxalate Fe by H to get greater porosity —

Test Sensitivity Reg Fe

1 gr — pkt 2 gr

2 1/2 3 3.5 4

4.5 5 6 7 10 —

get a Curve Reg pkt

Wea. MON. JULY 17, 1905 Ther.

If plate iron has contact in Center then the last fail to reduce will be the outside of the zinc so therefore better zoomy

Above ought to be good for Leclanché plates —

That zoomy [illegible] CuO in OX in Leclanché —

Wea. TUES. JULY 18, 1905 Ther.

Test of cell with non pyroporic plate previously frozen then reduced grid inside.

Test Hot to get it oxidized quickly — Va + WO free

Another one charge Hot 40 hours — WO + Va free —

Tell Dr Goulter that something in of that makes what Low when non pyroporic —

Wea. WED. JULY 19, 1905 Ther.

Rogers make some
oos stock 24 oz
Eyhot

Rogers also make
some with say 2 oz
but run across stock
to give strength to
tube oos

Wea. THUR. JULY 20, 1905 Ther.

To pocket charge it fully
40 hours
take out put in water
Soak couple hours
Let it self heat fully
Recharge & test,
then recharge a gum
& self heat in glass
& Recharge & test

Take tray out of old
plastic put over by
Rogers 240 ohms
pass me.

Wea. FRI. JULY 21, 1905 Ther.

pref tube 1/32
outside diam 7 z
125/1000
packed —
split moved
nothing on
outside long unscrew tube.
hollow plug plunger

Spread piston
inside plug
Unscrew
packed & closed lathen nut —

Wea. SAT. JULY 22, 1905 Ther.

put 2 charged iron
in bag one outside
1 inside of porcelain
bag in the porcelain cup
put 33% in outside
21% see of def of
Vallinger

distilled Hi in 21 7z
in 33% —

distilled Hi in 33 7z
in 21%

Wea. SUN. JULY 23, 1905 Ther.

Try economy in Cutting
Rods — See if Rod
has any with higher
Copper —

Sonic oxide —
Wet with Sulphate
Ammonia, then reduced
by H_2

Tungsten
Finely divided
has telephone rod and
battery

Wea. MON. JULY 24, 1905 Ther.

See if Ralph wants
Distilled water To
self he of Fe

Try Economy with &
without Nickeny

Nutts with
14% 20 25 33⅓
Copper + 4% Ng
increasing percentage
proportion to Cu
increases —

Try Economizing Fe
in 250 500 1 2
3 & 5 grms
Bromide K in KOH,
its easier dissolved
than KOH —
it allowed big excess
before

Charge Now pyro!
Fe — in KOH
at 1.75 Fahr
200 of Fe at up to
capacity

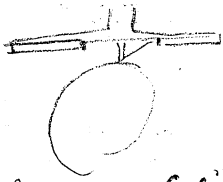
Try group 500
Using Iodide K —
Ni alloy Cy flake
Never tried it
with flake Co Ni

Alloy of Fe & Sodium
Melt Fe in Electric
arc & Throw in
Clean Sodium to make
20 @ 30% alloy
put in crucible
allow it decompose
decomp of nitrogen

Wea. THUR. JULY 27, 1905 Ther.

Dryer another Lazarus
Cement patent

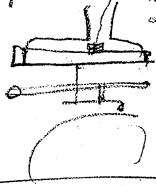
Wattles Mullan



Reg dia as a Cylin
to a dia Turncow
large

Wea. FRI. JULY 28, 1905 Ther.

Reproducer



Pulp - make screen
45 % Cu 50 % Fe
5 % Hg

Make 2 grades Crushed
10 atmos Smooth + Cor
40 200 or 300 atmos

Wea. SAT. JULY 29, 1905 Ther.

Make lot of Fe Cakes from oxalate, heavy press also light press - have water. Ignite to white. Soak various Copper salts, ignite some some more than once & ignite - Test direct - also reduce some in H at various temperatures -

Dotts in 1/2 Carps

Some cakes reduced non porous - then recycling in air alone temp fell fully red or tog direct little Copper soaked

Wea. SUN. JULY 30, 1905 Ther.

Reverse warm alc low E 18 pressing spring at 6 each - 2 W Lake 10 Bbg R 30

Dr to make Oxalate impulsion

~~Uranium~~ -

~~Molybdenum~~

~~Chromium~~

to be reduced in H & Hg

or 50% Copper reduced before reduction

Load to reduce non

Mo Cadmium 50 Cu 50

5% Hg

Wea. MON. JULY 31, 1905 Ther.

Ralph - make smear.
Cu 60 Fe 40 — Cu 70 Fe 30
ditto with Hg 5%
also Fe 60 Cu 40
Fe 70 Cu 30
ditto with Hg -
get Curves

Take second old
group 300 to 350
Rhus, Total
Lost Sing 1 wk
+ Recurred 1 week
1/2 2 weeks

Wea. TUES. AUG. 1, 1905 Ther.

Drop all the
groups 3 to 5 lbs
Co also Ni -
+ chg 10 rest 10
Sto

ditto Hat,
ditto 1st reserve
36 hours Hat,
then chg 10 rest
10 Sto - 1st 10 rest

Wea. WED. AUG. 2, 1905 Ther.

3 to 5 lbs grainy
2nd washing
decide [illegible]
dilute Reg

Mix with Reg Mix
platinum —
dilute palladium
d

Wea. THUR. AUG. 3, 1905 Ther.

Change & then
thoroly discharge of 2
pts. + elements
KOH, by H_2O +
ethyl — then
soak in Chloride
Conc of every
metal to get
Calalyzers

Wea. FRI. AUG. 4, 1905 Ther.

Calculation showed
Oz mixed with
Copper + Copper Hg
rows also -

possibly reduction
takes place by K
hence after Calcinate
Oxygen reduced
deflagration reach
metal - heater
Oxalate showed not
Oz ignited but
reduced by H -
with 50% Copper
in Fe

Wea. SAT. AUG. 5, 1905 Ther.

probably double
Oxalate Fe + Cu

try Double of
igniting + also
reduce by H -
also burn
Oxalate by Chemical
means

possibly the gas valve
in Fe to the 50 drops
amalgam formed with
the Hg - possibly
with 50 Cu 50 Fe
no Hg-gas V disappears

Wea. SUN. AUG. 6, 1905 Ther.

See chg Curve 72
5% 10 15 21
33%

Ferric fm Oxalate
wet with Tungstic
Chloride + Red by
H, also tungstic
ammonia + ignite
+ Red by H
also with Cu

Wea. MON. AUG. 7, 1905 Ther.

Hooper newspaper,
2 weeks but the
very old tubes
testcombined today

Weather Mullen
Regulatorable
rate in Recorder

Wea. TUES. AUG. 8, 1905 Ther.

XYZ

Expose all the [illegible] to acid vapor with all kinds of salts of all the metals

Make salts of all the metals + then - put - the Reg plates [illegible] 2 plates

Then make sheets of Every [illegible] on - [illegible] plates on the metals

Make slides + photo 2 [illegible] of metals

Wea. WED. AUG. 9, 1905 Ther.

~~Ferric oxalate in [illegible] [illegible] 9 oz - [illegible] 7 oz + 7 oz [illegible] must be strong heat -~~

Make some Salts of Ferric from Oxalate, Potassium Sulphate, Copper Nitrate to yellow with a shade [illegible] 2 1 shade 2 2 2 shades 2 3 shades Zinc Sol -

Isolating Ferrous Chloride into red hot Hydrogen

Save the HCl to redo

Fresh mercury Carbonium process - powder fall down into water funnel like -

Wea. THUR. AUG. 10, 1905 Ther.

Req up to Charge pans
now in 21% at
100 125 150 175
pans fresh once for 3 each
temp — use Nickels
2 same results.

also charge with strip
in 21% KOH, pans now
at 125 150 175 2.17.
+ then put with fresh
chg Nickels +
develop and see
results,

Wea. FRI. AUG. 11, 1905 Ther.

before discarding a
group of units +
deschgd - ~~[illegible]~~
dry them at 350 7 hr
12 run —

also recalling test
per Cat. used KOH
+ Hydroxide at 350
7 hrs used to say that
units discarded in order
after taking out of
battery were better
than 2 days — probably due
to Negative Conditioning +
then becoming active on delay

Wea. SAT. AUG. 12, 1905 Ther.

Dry pulse to force
[illegible] decomposing
O vacate Fe at lowest
possible temp —
It not the O more attracted
to K or H on charge

also the pure ferric
ox by dry process
dehydrate by oil process
to get the O most attracted
to reduction —

Lord Rosse makes Cu by
precip FeSO4 from aq
dilute by ammonia
wash + press thru
cloth until dry and so
till very dry then stamp

Wea. SUN. AUG. 13, 1905 Ther.

at a heat very dull red in
dark.

Watts 345 from very Ferric
hydrate Can be dehydrated
dehydrated at 160 to
200°C at, in a saturated
Sol of CaCl or NaCl,

Watts says Ferric hydrate
dehydrated by low
red heat,

Try some FeS
Roasted free S at
lowest temp —
also high temp —
powder before Roasting
[illegible]

Wea. MON. AUG. 14, 1905 Ther.

Letts from equipping
the Nutvale -
also from equipping
Double bells having
smallest quantity
giving satisfaction
Jerrett, Set double
operation etc -
To get Improved
Subdivided -
My Journals for -
Letts " " Nutvale

Wea. TUES. AUG. 15, 1905 Ther.

Make pocket fillers
with Excessively
leaky Copper Volume
by Current Washer
then fill with Force
by Brass scissors clips
delay being each
time very hot
temp -

J C Pfeiffer & Bro
General market
900 Bloomfield st
Hoboken -

Roast 10 lbs 1.80
Steak 3½ 35 } 2.15

Wea. WED. AUG. 16, 1905 Ther.

Pitch - Chatfield & Co's Wf Foot
Carthage Ohio

Kopak No 30 [illegible]
Raven [illegible] Mining Co
of Texas - [illegible]
Nelson Corporation

Asphaltic Pitch made by
Water - Pierce Oil Co
at their Texas plant

Asphalt - Gulf Refining
Co Port Arthur Texas

The Arthur C Harvey
Co - 375 Cases of
Imported Norway Shorts
Irons - By stock

Wea. THUR. AUG. 17, 1905 Ther.

Asphalt Mr John McHead
Casper Wyoming

Wax Tailings from
Standard Oil C

Wheelock Lovejoy & Co
23 Cliff St N.Y.
Importers ~~[illegible]~~
Swedish "Norway"
Iron

Horace T Potts & Co
Importers Swedish Iron

Wea. SUN. AUG. 20, 1905 Ther.

Ozocerite.
Mr Kronpa
Provo City
Utah

Ask for samples & price at RR -

saturate Hg Electr with Iron - press in Chamois Hg out put in pkts Hg free leaching or washing get free Hg out.

Wea. MON. AUG. 21, 1905 Ther.

detts and - Cu
Cd - Co Ni + other
metals in dif proptns

Ethyl Sulphuric a
$C_2H_5SO_3$ is the radical

Ing Guille Dicts,
of Ricks,

Ing 21/2 Methyl alcohol
dissociation power 2 to
1/3 of water - antiseptics

Wea. TUES. AUG. 22, 1905 Ther.

Change group in
water with only
10 milgrms KOH in
solution – Then
before descing peat
in 21% alcohol
another group
change in 21%
soak in water ½
hour then put
in fresh water
in descing

Wea. WED. AUG. 23, 1905 Ther.

group with 2 grms
acetone –

group with tubes
washed by capill
by dipping ends in
KOH & replacing
in closed jars
4 hours to completely
fill with KOH &
displace air –

Wea. THUR. AUG. 24, 1905 Ther.

[illegible] worked on
[illegible] with Ethyl.
[illegible] increased [illegible]
[illegible] [illegible]
Ethyl [illegible]

Ralph [illegible] [illegible]
[illegible] of CP Cab [illegible]
Reduced 6 yd. [illegible]
[illegible] Reg [illegible]
[illegible] total [illegible]
— Economy

Wea. FRI. AUG. 25, 1905 Ther.

[illegible] for zero
after 7½ [illegible] discharged
Soak in water ½ hour
[illegible] proceed with
[illegible] sec of V [illegible]
by deducting the KOH
[illegible] in Chg —
details Reverse of
[illegible] in Chg —

Last reading of Cell
in Minimum KOH &
Maximum Mon free
[illegible] on Longer [illegible]
[illegible]

Wea. SAT. AUG. 26, 1905 Ther.

Prepare Hydroxides of
Ni distill Fe by
using Ni as anode &
Ni as Cathode —
agitating bath
using NaSO4 —
or K nitrate or
NaCl — KNO3 gives
Fe2O3 Hydr NaCl
FeO Hydrox

Test corroding Fe pkt
in NaOH

Wea. SUN. AUG. 27, 1905 Ther.

also in 21% KOH
with 4 grams Rubidium
Hydroxide — as this gives
Hydroperox

Realize difficulties in
KOH Solid —
Polymerizate quite 200 mesh
Coc Prepare with Sulphur
KOH, & dissolve out
Realize —

Wea. Mon. Aug. 28, 1905 Ther.

Reduce Mixed precipitate or ignited Bisulfide Sulfur washed out by H to no precipitate state.

Mix { 30 Tin 70 Fe
" Sb 70 Fe
" Cu 70 Fe
" Bi
" Ni
" Co
" Cd
" Zn
"

also drop wash by to each 5% =

Or furnish Oxalate Cobalt to RAT to reduce by H wash H

Wea. Tues. Aug. 29, 1905 Ther.

Carbonate to which S is added if fused with arsenic the metal remains as sulfide free from arsenic — (Coatts powdered charcoal) (Ground & decarbonated)

Plate Fe pockets with Cobalt under Nickel —

Wea. WED. AUG. 30, 1905 Ther.

Charge 1/2 day 5 [illegible]
Reg Mix Fe 4 day
Continuous + then
put up to level of
Economy & Capac
[illegible]

1 set did not develop
below Volt
another not [illegible]
1 2 Volts —
[illegible] to 90
[illegible] to [illegible]

Wea. THUR. AUG. 31, 1905 Ther.

Chg 3 Reg Mixs Each
2 days
4 "
6 "

Take # 72 with
30% Cu 70 72 + 5 Hg O
open after charge
1 after discharge

Holland found out
if big pressure gas discharg
is from 72 or 111

Dr Goethe

Reg 7½ mix with [illegible] 5'

Mix @ 40% Co_2O_3 Hydrate

dried - powder [illegible] below

" 3

Ditto - Co_2O_3 [illegible]

" [illegible] 3

" [illegible]

30% Co " 7 " 3

Take Oxalate form

Mix so Mixes to 42%

following sulphates [illegible]

[illegible] to dissolve

If Sulphide [illegible] Craig Ralph

[illegible] by H [illegible]

No Hg

Sulphate	Co	Mg
in Mk "	Ni	Tungsten
" "	Ce	Zirconium
	Mn	[illegible]
	Sb	[illegible]

Mo
Wo
Ur
Ca

Sulphide Ba
Oxalate Lime.
~~Oxal Ba~~

Sulphide Lead
Sulphide for proto carbyl-ses
Cu " Ba
" " Lead
" " Cu gray sulph. "

arrange so ferric above in
Contact with the carbyl-ses Sulphide
before reduction — H not
reducing the Sulphide & acts as
a Combustion —

Try a Cell in strong Sulphide
(Silver Sulph) Potash + [illegible]
it does — add 5 to 10 H + use
a Voltaic Freiber Sulph

Sulphuretted H best [illegible]
Nitrous used by [illegible]
known per bottle
Then [illegible] H Cl
Etc

Wea. SUN. SEPT. 3, 1905 Ther.

Working Smelter

Roast then reduce to spongy powder & put in boiling Sulphur. It will oxidize the ore to Cu_2O_3 which yields 1 gram CoS or oxide –

Pass SO_2 (at most powder) Dissolve CoS formed & Cu_2O_3 yields Co_2O_3 — 1030 HU infusion effluent Sb_2Co 175 Cu_2O_3 1547 between SO_2 use 710 HU.

Roast speiss to Cu_2O_3 Co – Pass CS — Chalcocinnamon of reduc. oxid & combine with Co & Ni,

Impure group precipitate of K ClO_4 (pass through non chlorine Cl which is fast

Wea. MON. SEPT. 4, 1905 Ther.

K is parted moving towards cor –
Na slower Li very much slower

Group – 21 parts 4 grams Na_2OH
" " 8 "
" 12 "
" 2 grams Li_2OH
4 " "
8 " "
12 " "

Group 23 parts KOH
" 25 "
27 "
29 "

Have 1 group 4 grams $LiCl$.

1 group 4 grams

Group Sulphate Na
" " Li

Magnesium salts of the
[illegible]
Ammonium, Fatty acids
not sep.

Dip chromic Cold water
on long glass get pyrogallic
& oxalic make ink with
sulphuric & get acid chromate
of K - Record -

Relative affinity of Sulphur
for metals

Strongest Palladium
Mercury
Silver
Copper
Bismuth
Cadmium
Antimony
Tin
Lead
Zinc
Nickel
Cobalt
Iron
Chromic
Aluminum
Weakest Manganous

Salt, Dissolved
Solution of Roasted
Smeltlite —
fuse — from K_2S —
$CoCl_2$ — ASCl.

Boiling Roasted Smeltlite
in HCl — oxidizes the
~~must~~ HCl just enough by
little drops — then
reduce the arsenic
acid to arsenious
by SO_2 + crystalizes
out by neutralizing
the Solution — of
the heat leaves very
little As in Sol —
Cum OH by Bleach —

~~Then~~ Roast Smeltlite,
Oxidize to arsenic acid
Then dry + mix with
Salt fuse, add
$CoCl_2$ + Bicarbonate
~~reduce~~ add HCl,
free arsenic acid
+ Reduce by SO_2
Crystalize out,

add by 150 Soda
to roasted ore
+ precipitates CO (OH)
+ arsenite Soda
filter off — ~~[illegible]~~
~~Oxidize to Arsenic~~
~~by SO_2~~

Wea. SAT. SEPT. 9, 1905 Ther.

fuse washed out in
strong hydrog —
Heat residue SO_2
to reduce arsenic
to metal + distill off
CO + Hc to sublimate
filter off —

Soak some Reg
green in saturated
sol of Na_2O_3 in
NH + NHCl, dry
& ignite out
group —

Wea. SUN. SEPT. 10, 1905 Ther.

Lets Chloride — Methyl
dry — then precip by
KOH boil in leffes
KOH, dry.

See Greenlay in re
Hg Bleach Prm —

Soak green in acetate
Lead, precip by KOH
boil slight excess
KOH, dry

~~Soak etc~~
Precip green with
Lead.
Lets Antimony see if
acts like Bi!

Wea. MON. SEPT. 11, 1905 Ther.

RH – precip NaOH by
ROH instead NH
See up at 10 p.m. [illegible]

Precip from Chloride
by Na also K

ditto precip from
Nitrate by K + Na
ditto Oxalate –

precip reg in boiling
ditto Iodic acid
& afterwards [illegible]
to get Basic [illegible]

Wea. TUES. SEPT. 12, 1905 Ther.

Precip Carbonate –
afterwards precip
by Na + boil –

Precip Chloride from
Methyl ditto
Ethyl –

Speak RA about turbidity by
Electro Hg & precipitate
reducing by H + condensing
Hg – or oxidizing see over
& Hent + distill off +
condensing Hg –

Try KOH, 2 parts Anode
Hg Cathode deposit
Chromic — then
remove the ~~[illegible]~~ residue
or heat until only the
ox. chr. is
The black oxide powder
melted — gave a drop
was weighed practically
pure —

Try mix with Hg to
~~mix~~ to give 4% part,
Ag, ive Hg — in form of
oxides — to form the
Stable Silver amalgam

KOH —

30 ccm S.
~~[illegible]~~
60 Water
60 Cond Soda
[illegible] leaves Ro as OX + form
[illegible] Chromate —
of CR — dissolve in [illegible]
[illegible] Water & Cond Soda [illegible]
right immediately —
also go in ammonia
30 Sulphur
60 Cond Soda Salvay

Try remelted ox — Water
Soda Chromate Soda &
Chromic Oxide —

New process
Co Ni anode Hg cathode -
when nearly battery
draw off + let it
oxidize Co will
oxidize 1st then nickel
doing it twice or 3
times should separate
them - by cathode
the oxides

Roger Fred Oil in aka
some Eylet 006 leaf
prune rall some flowe
make 6 — group

Make some Iron picks
same or 005 + temp,

Roasted Smaltite
Salt, melt + add Co
Ni goes off
arsenite Na remain
or use Mag Na + Ca

Spun ~~blown~~ in arc
furnace with Mg
lining —

[illegible] Uranium [illegible]
[illegible] oxygen
[illegible]
[illegible]

Try chromic oxide
in KS also KS polysulphide
use Ni Cathode,
from set anode $NiCoS$ +
Reagent which does always
+ poly deposit as of
Cathode, Can use a Cath
to keep the powders up

The CoN with dilute ammonia
Can then be method to
a Sponge ammonia gas
Operation repeated
until all chromic gone
then CoS NiS roasted to
Sulphates + purified

The sulphates equivalent to oxides
+ CoO does not say dil
H_2SO_4 in which NiO is
almost insol —

OV Can be reduced + melted
to anode + deposited — H_2
as ammonia + allowed
oxidizes in oxygen not the
Co_2O_3 Co_2O_3 1st
2 equivalent volume is not
pure enough —

[illegible]
[illegible] from [illegible]
[illegible]
others [illegible] chemically
[illegible] — makes
[illegible] slightly need [illegible]
[illegible] of [illegible]

Try — this refers to precipitation
of Co oxide along with
chromium — from ammonia
It turns the ammonia

Cheap H_2S –
SO_2 passed thro with steam
thro red hot charcoal
approximately SO_2 reduced to S by the carbon
Water formed with the steam
Carbon + H + CO like H_2S combine
to form H_2S Coke is kept
red hot by burning here on
at intervals.

Another scheme using CO_2 on
Sulphide of Sodium –

another scheme
Producer gas passed over hot
pyrites – by action of the producer
H Hydrogen on the oxide upon the S
Evolved from the pyrites H_2S generated

Dry reduction of ferric SO_4
on roasted pyrites
Dec of O_2 goes to arsenate
at ferric SO_4 reduced to
ferrous –

Phosphorus [illegible]
Scrap Cu Impure $CuSO_4$ of
arsenic thrown down by
Caustic lime or oxide Cu

Impure electrolytic worked thru
Newcastle Sulphate Copper Nickel + Co
Crystalized, the Arsenious + Bi_2O_3
are yielded on boiling another deposit
Chicago blue stone crystalized out
Mother liquor evap cool mix of
blue stone arsenious acid
comes out. The mix of As_2O_3 +
$CuSO_4$ is not with great trouble
to obtain the As_2O_3
+ no Bi_2O_3 –

Pot Hellenbay – Casey Copper
Mother liquor treated to
throw down Cu in Calcite
mixed Cu + Co % arsenic
which sold for arsenic +
Grosu Colony mother

at Manufactd
with current 30 Ampy for work
from Sulphate Solution –
Arsenic is deposited in spongy
state at this low density
while Sulphides of Ni Co are –
Crystallized out of any Copper in
the electrolyte with the ore
spongy – the Cu is then deposited
out of the arsenic by weak
H_2SO_4 –

Try Thiosulphate Soda on Smelter
also roasted ore –

Try Smelter anode
Chl Soda with little
free HCl, keep alkaline
acid –

Reason NaCl destroyed with
the Na precipitated The As along
with Co are first ore formed –

Try Chl Calcium the wide
deport Calcium at Cathode,
a give Chlorine –

Then, Sol when saturated
with As_2O_3 CaCl NaCl
Can be Electrolyzed by
Keeping it acid while passing
As_2O_3 on Cathode,
or crystallizing Co Ni Cl
out with Mother
Liquor free Co Ni –
The next to last Mother
liquor put back in
Electrolyte –

If the mud from NaCl
which is mixed Co OH Ni OH
+ metallic arsenic

the $NaOH$ + CO_2 possibly
be absorbed out with
weak acid, say HCl –
as I do not think the Co_2
is combined,

Also have washed Dark
HCl – with excess acid
& Cryoholize + see how
free Chlorine Co the are

also Electrolize with
platin – anode –
No Cathode get all out
of Sol –

Send for acheson
Carbon + process
pages the order dont
grafite anodes

Can reduce Cl from
Very Cold solution of
$CrCl$ with Zinc very
little Co_2 will develope
+ no Ni –

Electrolize $NaCl$ with free $NaOH$
& circulate
the liquid until all is
Hypo – Then put into
another Cell with smaller
anode + this will give
arsenate + the Co_2 will
be thrown down as powder

also use Na + $NaCl$
together as Electrolyte
with arsenic Anode
1st Electrolyze so to get all
Hypo of sodium

Wea. MON. SEPT. 25, 1905 Ther.

fixing up chemroom up
clean for regular work

[illegible] to pump.
$FeSO_4$ [illegible] to the
No working
dry [illegible]
[illegible] +
[illegible] it to run
[illegible] up —

about to make a
[illegible] wash [illegible]
with an [illegible]
the sulphate
[illegible] it —
the heat

Wea. TUES. SEPT. 26, 1905 Ther.

Auto 20 [illegible]
Wind Rev 10 miles 7.366
20 " 29.2
40 116.8

[illegible] copper [illegible]
Arsenic [illegible]
Salts + H_2SO_4 [illegible]
[illegible] Cu
[illegible] be [illegible]
[illegible] + used [illegible]
[illegible] w/ C [illegible]
[illegible]

Wea. WED. SEPT. 27, 1905 Ther.

Cost of producing 7,2,0,3 lb
Metal at Silver Lake
Cost of Hydrogen
Iron 41615 lbs 1.725 c 7116
H_2SO_4 12 lbs 72155 lbs 721
Sundries 3
Labor 22
7,5,0,4 produces 112 424 lbs = $1607

Metallic Fe produces
16220 lbs · ·103 Cents lb
for Hydrogen

Reduction Cost Labor ·0295
Sundries ·0022
Coal ·0074
·0391

Total gas ·103
Reduction ·039
Cents 142
1412 Cents lb

Wea. THUR. SEPT. 28, 1905 Ther.

Wea. FRI. SEPT. 29, 1905 Ther.

Bismuth Notes

Usually in sulphides

One deposit of importance in Colo

Also found at Phoenix Arizona

found in considerable quantities in

Cerlano Peru in Bouleier

& La Plata County Colorado

Bismuth Queen lode 5 mi

from Golden Colorado

Vein 2 to 8 ft wide, in which

nickel occurs as Bismuthinite

Bismuthinite contains

80% of the metal -

Tetradymite bismuth sulphide

Bi recently been

identified in Ariz. in

one Tons of Bismuth nickel was

made at Leadville Colorado

in 1886 -

Combination goings in 1886

Consulting Co

Wea. SAT. SEPT. 30, 1905 Ther.

The Bolivian Co - The Royal Saxon

Co & properties of the

Cardenas Mines -

Assaying ranges from 1.14 lbs to

157 lbs

Bi recently been found in

Central Copper Pit at Alta

from Moulmina but none

of value

Several veins carrying Bi have

been found at a point 12 miles

west of Beaver City Utah

occurs in Dolomite varying from

1 to 9 ft in thickness

Bismuth nickel ore assays

assay from 1 to 6% nickel it

is thus low grade nickel ore

Concentrated ore etc ran

from 5 to 12 it is thought can

be made profitable in addition

low grade ores in Nature

Bi with gold & galena carrying

some Ag — a Quality of grain
One of the Wonders "The Granite"
in Granite Dist. and Wonderful
discovered in 1860 dropped a bit
over in 1891 which was said to
have carried off the
developments are small
knowledge of a number of short
prospecting shafts & tunnels
In Colorado — number of
companies organized
for development in Hinsdale
Boulder, Jefferson, Lake Ouray
& San Juan Cos
in the order of San Juan
New Th Comstock lode
rediscovered several yrs ago
A small amount pro-
duced Gunnison mine

Lake City Dist. of Hinsdale
Co shows 81 ⅔ Bi
carrying Ag at rate of
1.544 oz to Ton —
A graphite vein impure opaque
found near Tucson
Arizona
Bi is reported occurring
in Bank of Mount Vesta via
Alaska —
1905 U.S. Geo. Surv. Bi
Both production & price
controlled by Johnson
Matthey & Co London —
the Cost of Surveying
Says Colorado has produced
a number of Bi minerals
& argent phosphate etc.

Wea. TUES. OCT. 3, 1905 Ther.

Near Dodaville
Camerabra Co Nevada
a vein been opened
for 900 ft which is from
20 inches to 4 ft wide
Carries Bismuthinite
ore averaging 14% Bi

Near Newfoundland
Boxelder Co Utah
Bi ore high grade
reported to occur
associated with Copper ore

Inyo Co California
at Antelope northern side
of Death Spring Valley
large fault vein Gen &
Carb where at shown
Rich Bi Carb ores found

Wea. WED. OCT. 4, 1905 Ther.

see p 236 Oct 1888
Cal State Geol Surv

Bismuthite in Grafton Co
NH in yellowish white
Concretions —

Bismuthinite Te 48 Bi 53
occurs in Va at Whitehall
gold mines Spotsylvania Co
at Monroe mine Stafford Co
at Lehman mine Havanna Co
in NC, Davidson Co about 5
miles west of Cumberland mine
in Clinton scale & lamellar
Monroe along with Chalcopy
in quartz Epidote, Lemonite,
in Pennsylvania Susquehanna Co
4 mi E of Starbrooke
also in Chester & Phila Co

Ore sublimes at 180 Cent
So Can be outlined in [illegible]
better see if yellow sublimate [illegible]
appearing at 300 is reddish
Red fuse – Nearly [illegible]
Sulphur

Try Roasted ore [illegible]
by H_2SO_4 with powder
Copper – or Cobaltiferous
Copper by reducing in by
flow –

Dissolve Roasted ore in H_2SO_4
add Zinc & [illegible]
Hydrate [illegible]
Cube & [illegible]
Gummy – [illegible]
all gone [illegible]
by Zinc [illegible]
then precip the Ni by
KOH,

pass H Hro [illegible]
Sulphur & clean through
Roasted also [illegible]
ore

Boil powder ore with
Cl Burnum – a Cor Co Cl_2

Dissolve Roasted ore in
H_2SO_4 – then add iron
Turnings & precipitate the
Co & Ni. Wash precip
use the Sulphuric H_2
to covers Wad & fractionate
by Crystallizing the Co H_2
Sulphate & separate Mother
liquors –

Sources Bismuth
Lake Co furnished 253 Tons
in 1900, Ouray Co 65 Tons
6 to 12% ore both Carbonates
1 & 2 oz gold 5 to 6 oz Ag
price $8 to $11 per 20 lbs in
ore, went to Pittsburg Mahoning
Limbs – it was purchased
for them by the Leadville
Sampler. The State ore
Sampling works at Denver
priced
10% ore 150 Ton 15% ore
250 20% $350, 30% 550
40% 750 50% $1000 ton.
Bi found – Chaffee Co
Delaware, Lavender Colo. &
San Juan Co Colorado
Section. Between Maggie
& Picayune gulches &
Red Peak is the Bismuth
ore, disclosed lean gold &
Mn Cu & the principal minerals

Pool long time roasted
Co Mn Carbonate –
with Sulphuric Soda in
excess – this forms the
Sulfate which dissolves
& leaves Co Mn & Ag
Sulphides –
Use weak acid &
dis out the iron –
Then roast &
dis in H_2SO_4 –

Precip Sulfate Co Ni
by 33% hot. Throw
down the Co from
Ni & Co, some ammonia &
redissolve, boil out the Co
use see Co & get out

Wea. MON. OCT. 9, 1905 Ther.

Heard of formation of Na_2O in salt by precipitated compd.

Na_2O	1 mol in 1 liter	3.5
$2NH_3$	" "	8.10
BaO	1 " " "	10.10
MnO	precipitated	7.10
FeO	"	9.10
ZnO	"	13.3
PbO	"	15.8
CuO	"	24.15
HgO	"	27.10
Ag_2O	"	

Lectures 68 for Engineering News also Engineering Magazine —

Wea. TUES. OCT. 10, 1905 Ther.

Decomp $MnCl_2$ further ~~Hence~~ sulphate with Na_2CO_3 forming $ZnCO_3$. Normal Mg and Comp decomp ~~sets~~ first K_2O then K_2O & at Na_2O & the rest.

Letter Sulphate + dilute CuO by H_2O which seems not $MnOH$, or fundamental solvent for CuO + $MnOH$ get precipitating

Letter Alumina

Letter Manganous OH Phos would all Cases but in battery precipitating some solvent for

Make 2 two quart plates with [illegible] holes [illegible] drill [illegible]

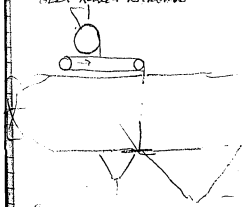
Roll with water [illegible] a [illegible]

[illegible] pure powder [illegible] to permanganate

Prepare [illegible] Nitrate Bi + [illegible] Sodi Nitrit Nitrit [illegible] + Red [illegible]

Ignite ferromanganese K permanganate & potassium [illegible]

Dizz 1st Carbon + Blow to [illegible] [illegible] Dissolve



Sol of Dubosse or Ascendo or Ill magnetic

Prepare [illegible] of 33 7 [illegible] 66 7 [illegible]

Pass 30 mach - Dry + quick out [illegible]

Pendulum magnetic [illegible] make the [illegible]

Precip. in H_2S in acid sol.

	Mo	Hg	Bi
	Sb	Ir	Au
	Sn	Se	Pt
	As	Te	
	Pt		

Not acid

So only precip. compounds from solute not the metals and that metals precip. only alone

Precip. by ammon. sulf. or phosphate

Al Cr Fe Ur Ti Zr

as oxides

Al-Ba Cr Tantalum

all rare metals

as oxalates

Mg-Ca Sr Ba.

Sol. in HNO_3 gives rolls of crystals

pounds by NO_3 Co are serious

see if can separate silver by flakes,

also trouble 1/2 pounds to 100 lb much of Cyanide 3 or 4 times 1/2%

watch screen for flakes –

also long Chlorum – Bromine

also Hg + dissolve out by Hydro Sulph. Na or H_2S +

The chances are that all Silver is free + there is also argentite

$70 mil to pound of ore

to detect Ag metallic

crush 20 mesh +

pass dry H_2S gas through

make yellow black

Try 80 [illegible]

Try group of Mi plated tubes
only which is planted Cosnet,

group 1/2 Mi 1/2 Co flake

Look up the Wo Mo Cr
Mixture with 1/2 sent to
Ralph

As Co flake makes good
Contact with Mi flake
tubes but not Co flake
in long run — mix
Mi 1/2 Thalmon flake with
Co flake for underlaid [illegible]
the Co flakes serving
for Mi (all) 2 Contact
70 grams 25 Co flake
10 Mi flake 1/2 Illinois

Wea. SAT. OCT. 21, 1905 Ther.

Wea. SUN. OCT. 22, 1905 Ther.

3 | 3130
1043

3 | 3225
1075

3 | 3167
1056

3 | 3137
1046

3 | 3211
1070

3 | 3221
1074

3 | 3020
1006

3 | 3289
1096

3 | 3158
1053

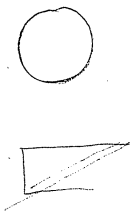
1 1043
2 1075
1 - 1056
2 - 1046
1 1070
2 1006
1 1044
2 1096
1 1074
2 1053

2 — 1067
1 - 1057

1053
1096 1043
~~1006~~ 1056
1046 1070
1075 1044
1074
4 | 4270
1067

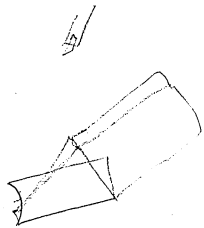
4 | 4287
1057

Wea. Mon. Oct. 23, 1905 Ther.

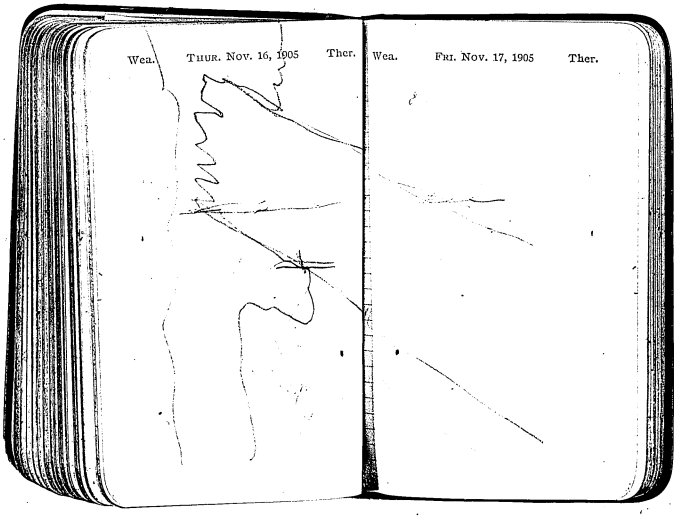


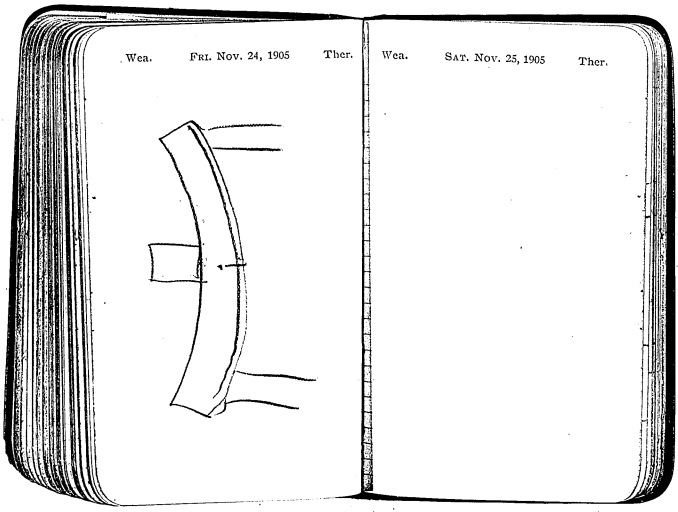
Wea. Tues. Oct. 24, 1905 Ther.

Wea. FRI. OCT. 27, 1905 Ther.



Wea. SAT. OCT. 28, 1905 Ther.


Wea.
Thur. Nov. 16, 1905
Ther.
Wea.
Fri. Nov. 17, 1905
Ther.


Wea.
Fri. Nov. 24, 1905
Ther.
Wea.
Sat. Nov. 25, 1905
Ther.

Wea. THUR. NOV. 30, 1905 Ther.

Wea. FRI. DEC. 1, 1905 Ther.

	Avg	Grey
Quarry		
Operating Labor	.067	.086
Repair "	.009	.019
Stripping "	.014	.019
Supplies & Renewals —	.011	.013
Coal	.011	.014
Depreciation	.017	.046
	12.9	19.7
Output	43520 Tons	33451
Railroad		
Operating Labor	.015	.021
Repair	.015	.022
Supplies & Renewals	.006	.008
Coal	.005	.005
	.041	.056
Tons	44920	33451
Crusher		
Operating Labor	.025	.030
Repair "	.014	.013
Supplies & Renewals	.004	.010
Coal	.006	.007
	.049	.060
Tons	42920	33451

Wea. SAT., DEC. 2, 1905	August	Ther. July
Mixing + weighing	.013	015
Operating Labor	001	001
Repairs "		
Supplies + renewals	001	003
Coal	015	019
Tons	661.44	661.10
Chalk		
Operating Labor	036	045
Repairs "	009	010
Supplies + renewals	010	010
	055	066
Tons	43356	35376
Kiln Plant		
Operating Labor	019	020
Repairs "	005	006
Wheeling Chemicals	006	005
Supplies + renewals	009	005
Kiln Coal	11.6	11.5
	15.8	15.4
Bbls	114395	104062

Wea. SUN. DEC. 3, 1905	Aug	July
Coal Plant		
Operating Labor	005	006
Repairs "	001	
Railroading Coal + Pet. to Ovens	002	001
Supplies + renewals	—	
	008	007
Bbls	104062	114395
Clinker Grinders		
Operating Labor	012	016
Repairs "	010	010
Supplies + renewals	005	006
	027	032
Bbls	120372	96069
Gypsum	034	034
Pkg + Shipping		
Pkg + Labor actual pkg	017	016
Office Wages + Foreman	002	003
Repairs Labor	005	009
Supplies + renewals	001	001
	025	029
bbls	121709	83558

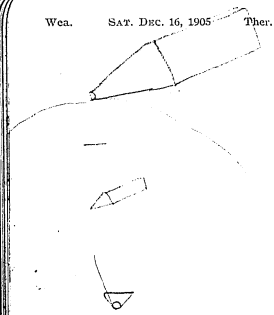
Wea.	Mon. Dec. 4, 1905	Ther.
	Cleng	Jerk
Machine shop		
Optg Labor	.048	.052
Supplies & renewals	.014	.017
Coal	.002	.003
	.066	.072
Clinker Tons	21735	19772
Electrical Dept	.058	.066
Optg Labor	.009	.009
Repairs "	.017	.027
Supplies & renewals	.054	.102
Tons clinker	21735	19772
Power Plant	.141	.149
Optg Labor	.008	.018
Repairs "	.034	.031
Supplies & Renewals	.350	.434
Coal	.533	.632
Tons clinker	21735	19772

Wea.	Tues. Dec. 5, 1905	Ther.
	Cleng	Jerk
Oil Department		
Optg Labor	.034	.035
Repairs "	.007	.006
Supplies & renewals	.015	.014
Installed this period	.014	.013
	.070	.068
Tons Clinker	21735	19772
Yards		
Optg Labor	.031	.030
Supplies, horse feed etc	.005	.007
	.036	.037
Tons Clinker	21735	19772
Offices		
Optg Labor	.060	.057
Supplies, postage & memo pads	.024	.032
Expenditure Sulcharm	.021	.027
	10.5	12.0
Tons clinker	21735	19772

Wea.	Wed. Dec. 6, 1905	Ther.
	any	Inc.
Laboratory		
Operating Labor	041	04
Supplies & renewals	007	005
	048	04.7
Tons Clinker	21735	19.772
Conveyors.		
Operating Labor	036	035
Repairs "	002	
Supplies & Renewals	058	.061
	72.6	19.6
Tons Clinker	21735	19.772
RR Main line to Plm		
Operating Labor	015	017
Repairs "	015	.018
Supplies & Renewals	007	.008
Coal	005	.005
	042	048
Tons clinker	19772	21735

Wea. Thur. Dec. 7, 1905	Ther.
Indirect Costs	%
Operating Labor	25368	36.9
Repair Labor	5632	.08.5
Oil & Plates	784	.01.1
Power, Railway, Rodm	290	00.4
Supplies & Renewals Rodm	2704	04.0
Supplies & renewals	2713	04.0
Coal in Kilns	13306	19.5
Coal for all Power	8789	12.7
Power Jaegers	605	01.0
Repairs	3983	05.8
Small Coal	298	00.5
Supplies & renewals	753	01.1
Operating Line Sulphur	472	00.7
Repairs Line	1672	02.4
Imported Limestone	310	00.5
Supplies & renewals Quarry	605	00.9
	68464	100.0%

Wea. SAT. DEC. 16, 1905 Ther.



Wea. SUN. DEC. 17, 1905 Ther.

Wea. WED. DEC. 20, 1905 Ther.

Wea.	Coal	Water	Rev
1043 –	2"	1/4 –	308
1048	1/4	5/8	
1058	7/8	1, 3/8	436
	1/4 –	1 1/2	

116 –
150

Wea. THUR. DEC. 21, 1905 Ther.

Very little dust
no dust
Light dust, think it lifts on
4 Cards A,

Dust blow out, begone

116 – 160
90 45
206 800
640

588

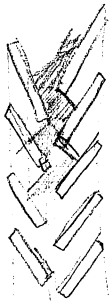
144

160

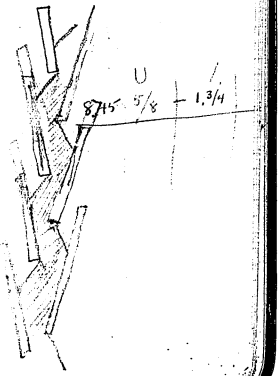
Wea. FRI. DEC. 22, 1905 Ther.

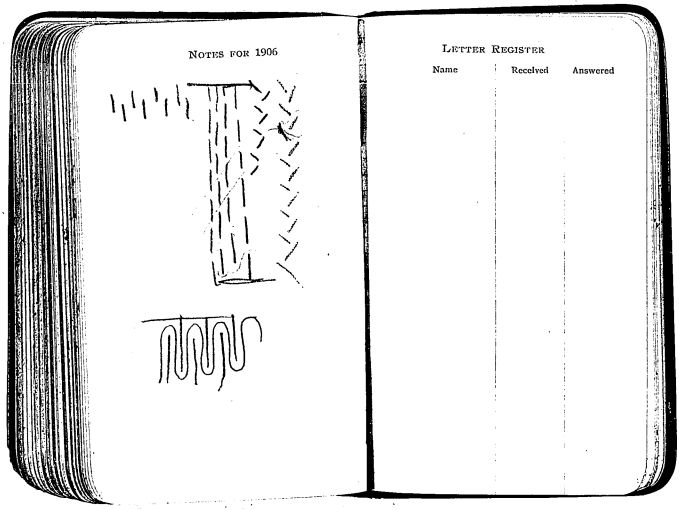
Wea. SAT. DEC. 23, 1905 Ther.

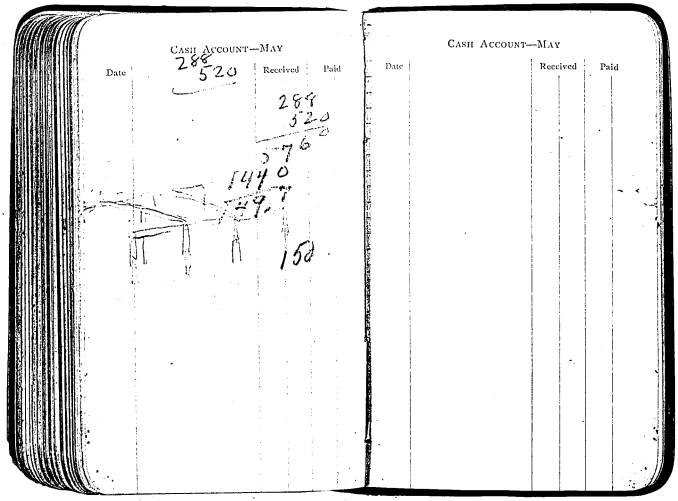
Wea. THUR. DEC. 28, 1905 Ther.



Wea. FRI. DEC. 29, 1905 Ther.




NOTES FOR 1906
LETTER REGISTER
Name
Received
Answered

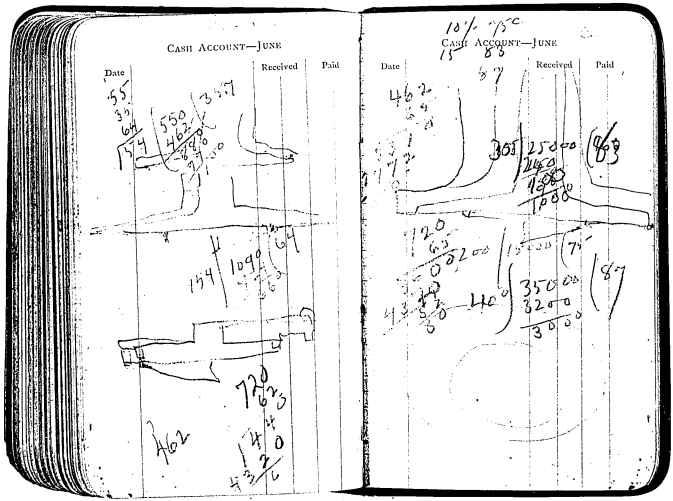


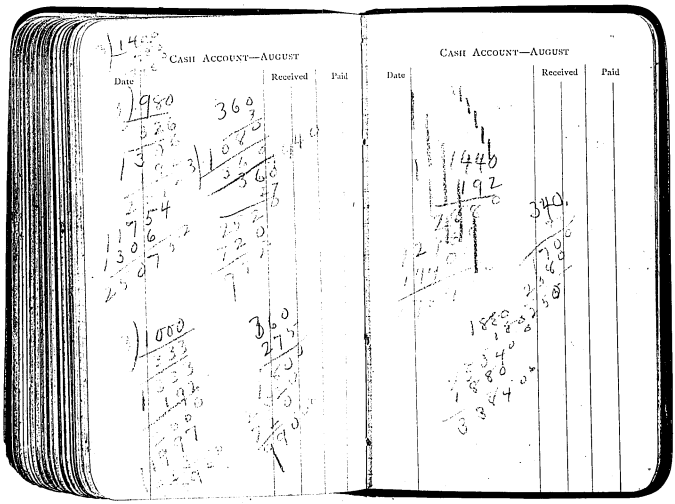
CASH ACCOUNT—MAY

Date		Received	Paid
	288 520		
		288 520 576 1440 297 150	

CASH ACCOUNT—MAY

Date		Received	Paid


Cash Account—June
Date
Received
Paid
Cash Account—June
Date
Received
Paid

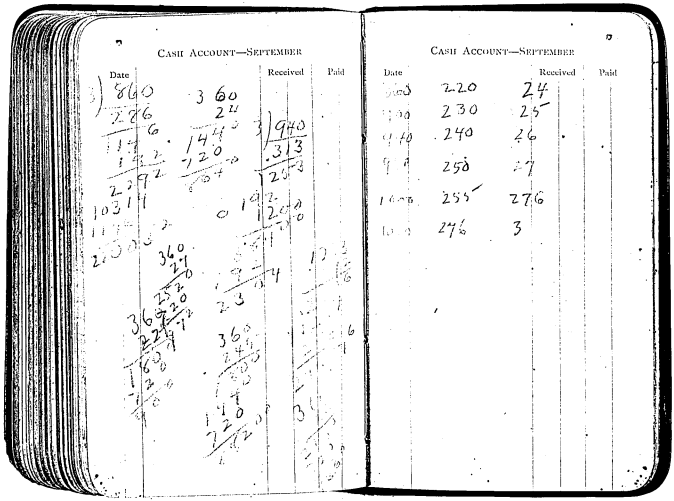


CASH ACCOUNT—AUGUST

Date		Received	Paid

CASH ACCOUNT—AUGUST

Date		Received	Paid



CASH ACCOUNT—SEPTEMBER

Date		Received	Paid

CASH ACCOUNT—SEPTEMBER

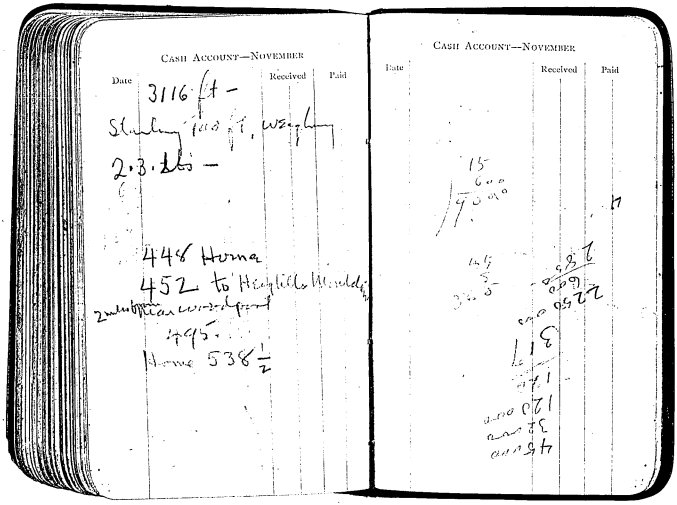
Date		Received	Paid
[illegible]	220	24	
[illegible]	230	25	
[illegible]	240	26	
[illegible]	250	27	
[illegible]	255	276	
[illegible]	276	3	

CASH ACCOUNT—OCTOBER

Date		Received	Paid

CASH ACCOUNT—OCTOBER

Date		Received	Paid



CASH ACCOUNT—NOVEMBER

Date		Received	Paid
	3116 ft –		
	Stanley 100 ft, weighing		
	2.3. lbs –		
	448 Home		
	452 to Highlills Mondelle		
	2nd Mean wind-speed		
	495.		
	Home 538 1/2		

CASH ACCOUNT—NOVEMBER

Date		Received	Paid
	15		
	600		
	7000		
	14		
	3.5		
	2250 000		
	317		
	14		
	120 000		
	32 000		
	45 000		

CASH ACCOUNT—DECEMBER

Date		Received.	Paid
[illegible]			
[illegible]			
Nov 20 —	9[illegible]		
" 21 —	9[illegible]		
[illegible]	100		
Morrison Nov 23 —	98 4/5		
		737	
256 288 2048			
2048 512 7372		3145 13 60	

180
108
737
343

60.

9
5.12
1.420
1.893
6820
8.713
Thomas Edison